

**Final Quality Report
Relating to the
EU-SILC Operation 2006-2009**

Austria



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Introductory remark to the reader

The document at hand presents quality evaluation criteria for the EU-SILC 2009 operation as foreseen in Council Regulation No. 1177/2003 and follows the structure outlined in Commission Regulation No. 28/2004. To avoid redundancies with the Intermediate Quality Report for the EU-SILC operation 2009 this Final Quality Report has a clear focus on the EU-SILC longitudinal component, strictly following the structure specified in Annex III of the aforementioned Commission Regulation.

In Austria EU-SILC operations started in 2003. A rotational design was implemented to integrate the cross-sectional and longitudinal component from 2004 onwards. Thus in 2009 the EU-SILC operation contains a panel rotation that extends to four consecutive years. Rotation 2/06, which started in 2006 and has been traced until 2009 (and will not be followed up in 2010) represents a fully matured longitudinal component to calculate the longitudinal persistent-at-risk-of-poverty indicator (see chapter 1 for details).

To direct reader's attention in particular to the longitudinal component and illustrate its quality, Statistics Austria decided to concentrate on the part of the sample which was eligible to be traced between 2006 and 2009, i.e. the rotational group R2/06. Where necessary this is complemented by information on the full sample of the cross-sectional component 2009 (R2/06, R3/07, R4/08, R1/09).¹

¹ For details on the full sample of the cross-sectional components of EU-SILC 2006-2009, see the respective intermediate quality reports of the EU-SILC operation for the years 2006-2009.

1. Common longitudinal European Union Indicators based on the longitudinal component of EU-SILC

The longitudinal dataset 2006-2009 of the EU-SILC operation comprises a panel of four years (2006-2009). The main objective of the four-year panel rotation is to deliver an adequate data basis for the calculation of the persistent-at-risk-of-poverty indicator.

As described in the EUROSTAT document Doc. LC-ILC/39/09/EN-rev.1 of the Working Group on Living Conditions the assessment of persistent poverty is one of the primary indicators on social inclusion.² For the estimation of the percentage of panel-persons living with at-risk-of-poverty, the at-risk-of-poverty threshold from the cross-section of each year of the four-year panel is used.³ People who were missing in at least one of the four-year panel and therefore are not part of the balanced panel 2006-2009 are excluded from the analysis. The balanced panel consists of 2,493 persons living in 1,151 households in 2009.

The abovementioned strategy complies fully with the one described in document LC-ILC 39/09 (page 43 ff.). Persistent at-risk-of-poverty occurs if a panel person is at-risk-of-poverty (according to the cross-sectional threshold) in the last wave of the four-year panel (i.e. 2009) and has been at-risk-of-poverty at least two times during the preceding waves. Table 1 shows possible combinations of being at-risk-of-poverty which are contained in the longitudinal at-risk-of-poverty indicator:

Table 1 : Types of persistent-at-risk-of-poverty

Duration of at-risk-of-poverty	T 2009	T-1 2008	T-2 2007	T-3 2006
4 years	at-risk-of-poverty	at-risk-of-poverty	at-risk-of-poverty	at-risk-of-poverty
3 years	at-risk-of-poverty	at-risk-of-poverty	at-risk-of-poverty	not at-risk-of-poverty
3 years	at-risk-of-poverty	at-risk-of-poverty	not at-risk-of-poverty	at-risk-of-poverty
3 years	at-risk-of-poverty	not at-risk-of-poverty	at-risk-of-poverty	at-risk-of-poverty

According to the EU-SILC longitudinal dataset 6.2% of all persons who are within the reference population from 2006-2009 are in persistent-risk-of-poverty.

Table 2 : Persistent-at-risk-of-poverty rate by sex

At-persistent-risk-of-poverty		
Age	Sex	%
Total	T	6.2
	M	4.4
	F	7.9
0-17	T	3.7
18-64	T	5.1
	M	3.7
	F	6.4
65+	T	13.2
	M	8.8
	F	16.5

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

² See page 9 in the respective document.

³ It should be mentioned that no correction for PY080 was made for the years 2006 to 2008. For these years py080 is not included in the household income. The first year this was required for by the ISG decision of May 2010 was 2009. From 2009 on py080 is included in the household income. However analysis shows that the impact of PY080 on the poverty threshold is negligible in Austria.

2. Accuracy

Accuracy refers to the closeness of calculations and estimates to the exact or true population values.

2.1. Sampling design

2.1.1. Type of sampling

The longitudinal dataset of EU-SILC 2006-2009 as transmitted to EUROSTAT by February 4th 2011 consists of the rotational group 2 of EU-SILC 2006, the rotational groups 2 and 3 of the cross-sectional sample in EU-SILC 2007 and the rotational groups 2, 3 and 4 of the cross-sectional samples of EU-SILC 2008 and 2009.

In 2006, the sample for the first wave of the four-year longitudinal component 2006-2009 was drawn from the central registration register ZMR (Zentrales Melderegister), a constantly updated population register based on the register of residence. The Ministry of the Interior administers this register. For the first wave sample of the four-year longitudinal component addresses were selected with a simple random sampling procedure.

2.1.2. Sampling units

Sampling units are dwelling units registered in the ZMR. The sampling frame consisted of all accommodations with at least one person aged 16 or older who had her/his main residence (Hauptwohnsitzmeldung) in these accommodations. The following units were excluded: institutional housing facilities, dwelling units in which all persons with their main residence in this unit were younger than 16 years and units which had been selected for the prior samples of EU-SILC.

2.1.3. Stratification criteria

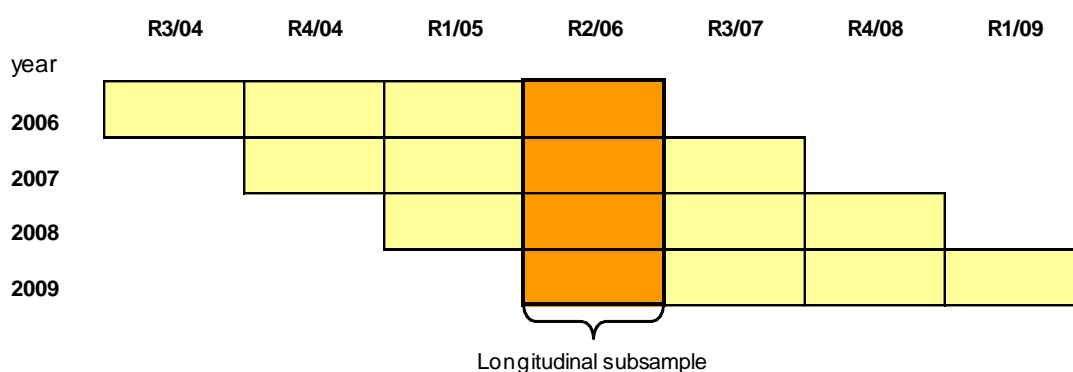
In the first wave of the four-year longitudinal component 2006-2009 (R2/06) a simple random sample without stratification was used.

2.1.4. Sample size and allocation criteria

The necessary sample size for Austria was calculated according to the Commission regulation (EC) No 1177/2003 to guarantee 4,500 households cross-sectionally and 3,250 households longitudinally under simple random sampling.

The cross-sectional sample of EU-SILC 2006 therefore consists of 8,450 addresses which were used by the fieldwork institute. The four-year longitudinal component of EU-SILC 2009 consists of the rotational group 2 of 2006, 2007, 2008 and 2009. In 2006 3,588 addresses belonged to rotational group 2.

Figure 1: Rotational design - longitudinal design 2006 - 2009



The household register (d-file) of the four-year longitudinal component 2006-2009 consists overall of 8,711 addresses: the original addresses of the first wave 2006 (N = 3,588), the addresses of follow-up households 2007 (N = 2,058), the addresses of split households 2007 (N = 67), the addresses of follow-up households 2008 (N = 1,625), the addresses of split households 2008 (N = 54), the addresses of follow-up households 2009 (N = 1,279) and the split households 2009 (N = 40).

The total of 6,220 completed household interviews consists of 2,058 interviews in 2006, 1,703 interviews with followed-up households in 2007, 28 interviews with split households in 2007, 1,254 interviews with follow-up households in 2008, 25 interviews with split households in 2008, 1,130 interviews with follow-up households in 2009 and 22 interviews with split households in 2009.

In 2007 all households of rotation R2/06 successfully interviewed in 2006 were followed up (N = 2,058). Hence the number of issued addresses in 2007 is the same as the number of accepted interviews in 2006. These

households and 67 split households then constitute the 2,125 used addresses of 2007. The households provided 2007 1,731 interviews (1,703 follow-up and 28 split). In 2008 the number of follow-up households was reduced to 1,625 households.⁴ Adding the 54 split households, those constitute the basis of 1,679 addresses of 2008. 1,279 household interviews could be successfully conducted in 2008, including 25 interviews of split households. The basis of 2009, the final year of the panel, consists of 1,319 addresses. 40 of these addresses belong to split-off households. The remaining 1,279 addresses consist of accepted household interviews of the preceding year. These households finally provided us with 1,152 accepted household interviews in 2009.

Table 3 : Sample size, addresses and household interviews (R2/06)

	2006		2007				2008				2009			
	N	%	Follow-up households	N	%	Split households	N	%	Follow-up households	N	%	Follow-up households	N	%
Longitudinal component														
Used addresses	3,588	100.0	2,058	100.0	67	100.0	1,625	100.0	54	100.0	1,279	100.0	40	100.0
Addresses existent	3,534	98.5	2,056	99.9	67	100.0	1,622	99.8	53	98.1	1,279	100.0	40	100.0
Addresses not existent	54	1.5	2	0.1	0	0.0	3	0.2	1	1.9	0	0.0	0	0.0
Gross sample	3,534	100.0	2,056	100.0	67	100.0	1,622	100.0	53	100.0	1,279	100.0	40	100.0
Addresses successfully contacted	3,515	99.5	1,989	96.7	27	40.3	1,545	95.3	9	17.0	1,252	97.9	9	22.5
Addresses not successfully contacted	19	0.5	67	3.3	40	59.7	77	5.0	44	83.0	27	2.1	31	77.5
Successfully contacted addresses	3,515	100.0	1,994	100.0	40	100.0	1,545	100.0	44	100.0	1,252	100.0	31	100.0
Household questionnaire completed	2,058	58.5	1,703	85.4	28	70.0	1,254	81.2	25	56.8	1,130	90.3	22	71.0
Refusal to co-operate	985	28.0	235	11.8	7	17.5	235	15.2	12	27.3	71	5.7	5	16.1
Entire household away for the duration of fieldwork	397	11.3	48	2.4	5	12.5	48	3.1	7	15.9	38	3.0	3	9.7
household unable to respond	68	1.9	7	0.4	0	0.0	7	0.5	0	0.0	13	1.0	0	0.0
Other reasons	7	0.2	1	0.1	0	0.0	1	0.1	0	0.0	0	0.0	1	3.2
Successful household questionnaire	2,058	100.0	1,703	100.0	28	100.0	1,254	100.0	25	100.0	1,130	100.0	22	100.0
Interview accepted for database	2,058	100.0	1,703	100.0	28	100.0	1,254	100.0	25	100.0	1,130	100.0	22	100.0
Interview rejected	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

2.1.5. Sample selection scheme

As described in the sections 2.1.1. and 2.1.3. the addresses of the first wave of the four-year longitudinal component (R2/06) were selected with a simple random sampling design.

2.1.6. Sample distribution over time

In 2006 the fieldwork period of the operation of EU-SILC 2006 started in April and was extended until September. The fieldwork of EU-SILC 2007 started earlier in the middle of March, and was concluded during the second half of September. The fieldwork for the EU-SILC 2008 operation started in May and ended in September. The interview period for EU-SILC 2009 started in April and was finished in October.

Table 4 : Number of successful interviews by date of interview (R2/06)

	2006	2007	2008	2009	Total
March		105			105
April	202	298		74	574
May	388	295	207	261	1,151
June	393	234	527	237	1,391
July	448	395	280	308	1,431
August	362	303	199	169	1,033
September	265	101	66	91	523
October				12	12
Total	2,058	1,731	1,279	1,152	6,220

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

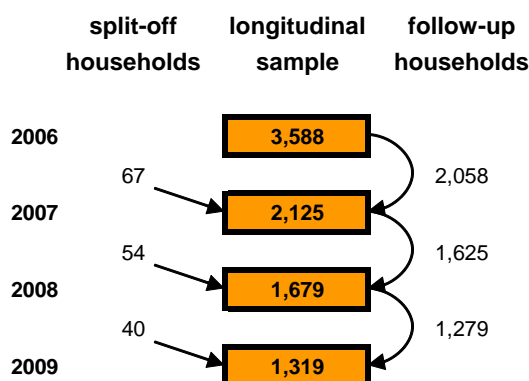
⁴ Compare: Intermediate quality report 2008 ch. 2.1.3

2.1.7. Renewal of the sample: rotational groups

The year 2004 was the initial year of the rotational survey design. A new sample was drawn and the rotational groups were determined by a random selection process that ensured the required minimum size of the rotational groups during the following years.

During the years 2006 to 2009 the number of households belonging to the panel Rotation R2/06 changed considerably. On the one hand households left the panel due to reasons such as refusal of cooperation or absence during the fieldwork period. On the other hand new households joined the panel when a sample person moved out and formed a new household (split-household).

Figure 2: Development of the sample over the time (R2/06)⁵



2.1.8. Weighting⁶

The longitudinal data set for individuals in EU SILC 2009 contains information on the eligible individuals traced from original sample households in EU SILC 2006, EU-SILC 2007 or EU-SILC 2008.

This data structure allows for three analytic perspectives:

- A longitudinal population of individuals who were in the target population for all four years (2006 to 2009)
- A longitudinal population of individuals who were in the target population for the last three years (2007 to 2009).
- A longitudinal population of individuals who were in the target population for the last two years (2008 & 2009).

For each perspective different weights are required according to the EUROSTAT document EU-SILC 065 of the 2009 operation. Common starting point of the longitudinal weights RB062 for the two-year panel, RB063 for the three-year panel and RB064 for the four-year panel is the base weight RB060. From the latter also the cross-sectional weight RB050 had been derived.

The procedure described below sets out from the design weights of the household sample in 2006 and their adjustments due to non-response in the initial sample. These weights were then adjusted for each individual by the inverse propensity to stay in the panel, whereby response probabilities were estimated using a logistic regression model. Individuals who entered the survey either as co-residents or as newborns had no base weight from a previous year. In line with EUROSTAT's recommendations newborns were assigned their mother's base weight or, if the mother could not be found, the average of base weights in the household. Other co-residents received a base weight of zero. (cf. EU-SILC Intermediate Quality Report 2009, ch. 2.1.8.2.).

2.1.8.1. Design factor – first wave 2006

At the starting point of the EU-SILC 2006 survey households were selected by simple random sampling. Each household had the same inclusion probability and the design weight was given by the total number of households in the sampling frame divided by the number of selected addresses.

2.1.8.2. Non-response adjustment – first wave 2006

The aim of non-response weights is the reduction of the bias caused by unit non-response on household level for the first wave and for attrition among individuals for the follow-up waves. The correction of this bias ideally

⁵ The first wave sample consists of addresses. The actual number of households is usually smaller, as some addresses are ineligible.

⁶ Weighting procedures for the EU-SILC cross-sectional component can be found in the intermediate quality reports.

requires knowledge on the response probability of each of the responding households. Each record in the dataset is then re-weighted by the inverse of this probability.

In 2006 the estimation strategy applied for the first wave households by Statistics Austria used all information available in the sampling frame. The following explanatory variables from the sampling frame were used in a logistic regression model in order to estimate the response probability of each household: Region (NUTS 2 level), degree of urbanisation and information on the number of household members and their distribution according to gender, age and citizenship.⁷

The design weights adjusted for non-response in the 2006 survey provided the basis for the further adjustments of the longitudinal component.

2.1.8.3. Adjustment to external data – first wave 2006

External adjustments are done to improve the consistency of estimations with reliable external sources. This step is also documented in the respective intermediate quality report for EU-SILC 2006.

The reference data source for calibration was the Microcensus, a quarterly household survey with a sample of more than 22,000 randomly selected households. As a reference data base the annual average of the Microcensus 2006 was chosen. The Microcensus operates with a rotational design like EU-SILC. It incorporates the Labour Force Survey, and due to the size of the sample it is also the most important reference for the socio-demographic structure of private households in Austria.

The adjustments were done on the basis of the product of the design weights and the non-response weights. A calibration was applied to all rotations together. The calibration was carried out simultaneously on household and on individual level and with reference to the following variables:

Household level:

- household size (four categories: 1, 2, 3 household members and households with 4 and more household members),
- tenure status (two categories: rented flat/house or owned),
- region (nine categories: Nuts 2 level).

Individual level:

- Sex
- age (younger than 15 yrs., 15 to 34 yrs., 35 to 64 yrs., 65 yrs and older)

In addition to these variables adjustments were implemented to achieve coherence in

- the number of foreign citizens using microcensus data
- the number of recipients of unemployment benefits for a duration of at least 2 months, using data from administrative sources

The variables for calibration were chosen in conformity with the EUROSTAT proposal in doc EU-SILC 65/05. An “integrative” calibration design was applied with the target that on individual level every person of the household should be assigned the same weight. The individual characteristics were aggregated on household level, and dummy variables were constructed for every parameter of the individual adjustment characteristics.

In 2006 the SAS macro "CALMAR" which was developed by INSEE was applied to calculate calibrated weights.

2.1.8.4. Final longitudinal weights – first wave 2006

A final correction of individual non-response within a household was not necessary because the small number of missing cases was completely imputed. In the first wave, the personal longitudinal base weights (RB60) are the weights resulting from the design-weights after non-response adjustment and calibration.

2.1.8.5. Non-response adjustments – subsequent waves

For the second, third and fourth wave households their base weights correspond to the design weights in 2006 adjusted for non-response and calibrated for external marginal distributions. Given that longitudinal households are difficult to define, weighting for attrition is based on individual attrition propensities.

In 2008 it was necessary to reduce the sample size of the follow-up households. Therefore, the base weights of the third wave (in the year 2008) had to compensate for the reduction of the number of follow-up households. The base weights of persons in households from 2007 that were followed-up in 2008 had to be rescaled. Especially

⁷ See the Austrian intermediate quality report for EU-SILC 2006 for a more detailed description of the non-response adjustment for the first wave sample of 2006.

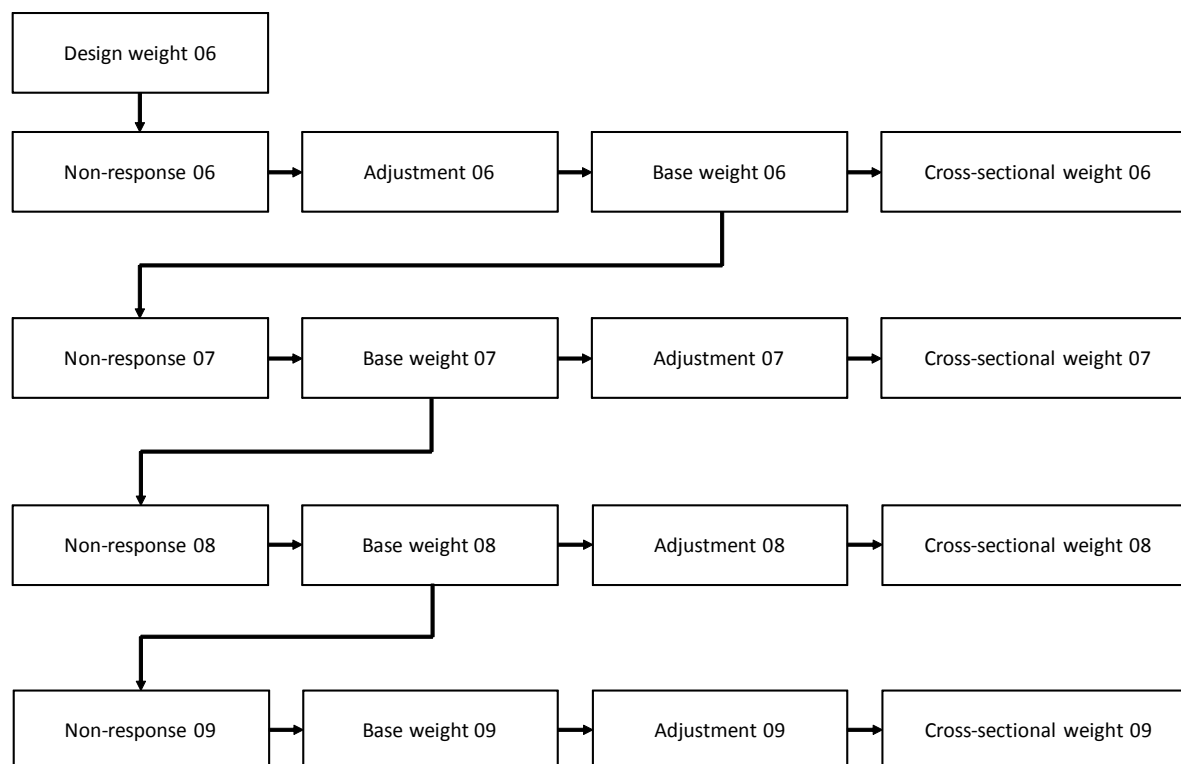
the weights of persons in households that were never at-risk-of-poverty during the previous years had to be enlarged because these households were not followed-up completely. This strategy assured that the reduction of the follow-up sample did not reduce the sum of base weights. (A more detailed description of the reduction of follow-up households in EU-SILC 2008 can be found in the Austrian EU-SILC Intermediate Quality Report 2008 (ch. 2.1.3 and ch. 2.18.).

For the non-response adjustment for respondents followed up in the second, third and fourth wave, more information is available from the household and personal interviews of the first wave. Therefore the response probability of each person was estimated on the basis of a logistic regression model. In the first step a set of significant variables between participation and non-participation in the second wave was selected. Significance was tested with t-test and Chi-Square. Variables with a correlation with income (main variable of interest) were selected into the model. The non-response model is identical to the non-response model of the cross-sectional component and was described in detail in the relevant intermediate quality reports.⁸

Design weights and non-response weights are multiplied to obtain the personal base weight (RB060) for the subsequent wave. This product is not defined for individuals who were newly born between 2006 and 2009. They receive their mother's weight or, alternatively the average weight of sample persons in the household. In principle new entrants from outside the target population should be treated in the same way. In absence of the required information of their former population status all other co-residents are assigned zero base weights.

Figure 3 gives an overview of the weighting procedure described so far.

Figure 3: Longitudinal weighting scheme EU-SILC



2.1.8.6. Further adjustments to external data for the longitudinal component

The base weights described in section 2.1.8.5 were used to produce longitudinal weights for the two year panel 2008-2009 (RB062), for the three year panel 2007-2009 (RB063) and for the four-year panel 2006-2009 (RB064). In order to establish coherence between the cross-section of EU-SILC 2009 and the last year of the longitudinal panels, the longitudinal weights were calibrated with a procedure similar to the one described in section 2.1.8.3.

Longitudinal analysis of EU-SILC 2009 data disclosed inconsistencies between cross-sectional and longitudinal results.⁹ Analysis of the first longitudinal datasets 2004-2007 and 2005-2008 showed remarkable inconsistencies between longitudinal and cross-sectional estimates indicating a bias due to attrition. In the 2006-2009 dataset the cross-section and the longitudinal component are much more consistent. The at-risk-of-poverty rate estimated upon cross-sectional data 2009 was 12.0% whereas 11.8% for the four-year panel 2006-2009.

⁸ Compare: intermediate quality report 2006 ch. 2.1.8., intermediate quality report 2007 ch. 2.1.8, intermediate quality report 2008 ch. 2.1.8.

⁹ See the final quality reports of EU-SILC 2004-2007 and EU-SILC 2005-2008 for details.

Although there are only small inconsistencies between the cross-section of 2009 and the longitudinal component 2006-2009, the calibration technique utilized for the longitudinal datasets of EU-SILC 2004-2007 and EU-SILC 2005-2008 was also applied. The calibration method aims to obtain weights which establish coherence between cross-sectional and longitudinal poverty estimates and population structure for 2009, the final year of the panel.

For each of the longitudinal weights RB06i ($i \in [2;3;4]$) a new sample was constructed comprising:

- Records from the longitudinal sample which have positive weights (i.e. where $RB06i > 0$, for a panel with a duration of i years)
- Newborns from the longitudinal sample ((i.e. where $RB06i = 0$, for a panel with a duration of i years). Their weight is replaced by the base weight RB060.
- Records from the cross-sectional sample which entered the frame population in the period¹⁰ after the first year of the respective panel with their cross-sectional weight (RB050).

If only records of 2009 are taken into account, this reconstructed cross-sectional dataset should be consistent with the cross-sectional dataset of EU-SILC 2009. It contains groups of people who can be present in the cross-section of 2009 and the longitudinal dataset 2006-2009 and also persons who are only part of the cross-sectional dataset 2009. However, there still remain the above described inconsistencies regarding the major social indicator of EU-SILC, namely the at-risk-of-poverty-rate.

These inconsistencies can occur because of:

- Sampling Errors
- Systematic panel attrition
- Measurement errors in a repeated survey

In order to establish coherence the base weights of the reconstructed cross-section were adjusted to distributions of the cross-sectional dataset of EU-SILC 2009.

The adjustments were applied on individual level on the basis of the variables listed under 2.1.8.3. Some additional variables on individual level were added to the adjustment process. Altogether, the following variables based on external data were used:

Household level:

- household size (four categories: 1, 2, 3 household members and households with 4 and more household members),
- tenure status (two categories: rented flat/house or owned),
- region (nine categories: Nuts 2 level).

Individual level:

- Sex
- age (younger than 15 yrs., 15 to 34 years, 35 to 64 years, 65 years and older)
- Citizenship Austria or foreign country
- Income below the median equivalised income
- Income below 60% of median equivalised income (individuals at-risk-of-poverty)
- Individuals belonging to the population not covered in the panel (migrants and new borns)
- Beneficiaries of unemployment benefits for a duration of more than one month (data from the association of the national social-security insurances, "Hauptverband der österreichischen Sozialversicherungsträger" are used)

After the calibration using the SAS macro "CALMAR" people not part of the longitudinal panel were removed from the reconstructed cross-sectional dataset and newborns from the longitudinal sample received a longitudinal weight RB06i ($i \in [2;3;4]$) of zero. The new longitudinal dataset is only filled for persons belonging to the respective panels, but is also consistent with the cross-sectional data of 2009.

¹⁰ To identify these persons, the new longitudinal variable RB031 "Year of immigration" was used.

2.1.8.7. Final longitudinal weight

Individuals entering the population after the start of a panel study cannot be represented in the panel population. This part of the target population is called "IN-Population".¹¹

The panel which started in 2006, i.e. R2/06 forms a four-year panel. The appropriate weight is RB064 which is defined for all individuals present throughout this period excluding newborns and co-residents. RB064 before calibration is identical to RB060 apart from a scaling factor. For RB062 and RB063 the longitudinal weights require some adjustment which is applied before the calibration.

The four-year panel incorporates also a three year panel and a two-year panel. When the three-year panel of Rotation R2/06 is combined with the three-year panel which was launched in the year 2007 (R3/07), a small part of the population is only represented in this latter part. This can be referred to as "IN-Population" and consists mostly of migrants of the year 2007. Their weights need to be inflated accordingly to give an unbiased representation of the population in scope during the years 2007-2009. In accordance with the EUROSTAT document 065/05.1 (section V. of the chapter on weighting) an inflation factor of 2 should be chosen for the longitudinal weights RB063 of the IN-Population, since these persons couldn't be represented in rotation R2/06 of the three year panel which consists of two rotations (R2/06 & R3/07). The same procedure was applied to the two-year panel 2008 to 2009 which consists of the rotation R2/06, R3/07 and R4/08. A small fraction of the persons of rotation R3/07 and R4/08 belong to the IN-Population described above. The weights of these persons should be inflated by the factor 3/2 (if they entered the target population in 2007) or a factor of 3 (if they entered the target population in 2008).¹²

2.1.8.8. Final cross-sectional weight

Final cross-sectional weights of EU-SILC are obtained by a calibration of the joint cross-sectional and longitudinal sample following the procedure described in 2.1.8.3. The adjustments were carried out on household level and on individual level. A final correction of individual non-response within a household was not necessary because after imputing the missing cases, there was no individual non-response.

2.1.9. Substitutions

Substitutions were not necessary for any of the four years of the EU-SILC operations 2006-2009.

2.2. Sampling errors

The subsequent tables present means, number of observations and standard errors for each wave of the longitudinal component and the cross-sectional component in the year 2009.

¹¹ See EUROSTAT document EU-SILC 065 page 38f. for details.

¹² To identify these persons, the new longitudinal variable RB031 "Year of immigration" could be used for the first time. This is an improvement compared to previous years where only register data from the original sample were available to determine whether a household contained individuals who entered the population after the previous sample had been drawn. RB031 made it possible to identify if a household consisting only of migrants belonged to a specific part of the "IN-Population".

Table 5 : Mean, total number of observations (before and after imputation) and standard error for income components 2006 (households & persons, weighted mean, R2/06)

	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Total household gross income	41,017	704	2,058	702
Total disposable household income	31,219	1,239	2,058	493
Total disposable household income before social transfers other than old-age and survivors' benefits	28,271	1,231	2,033	487
Total disposable household income before social transfers including old-age and survivors' benefits	22,358	1,170	1,901	546
<i>Net income components at household level</i>				
Income from rental of a property or land	8,095	66	75	1,386
Family/child related allowances	4,885	678	683	131
Social exclusion not elsewhere classified	2,879	47	47	502
Housing allowances	1,497	71	74	108
Regular inter-household cash transfer received	4,395	133	141	381
Interest, dividends, profit from capital investments	256	1,046	1,554	24
Income received by people aged under 16	1,592	18	23	253
Regular inter-household cash transfer paid	3,732	131	138	274
Repayments/receipts for tax adjustment	-198	748	753	54
<i>Gross income components at household level</i>				
Income from rental of a property or land	8,305	39	75	1,850
Family/child related allowances	4,885	678	683	131
Social exclusion not elsewhere classified	2,879	47	47	502
Housing allowances	1,497	71	74	108
Regular inter-household cash transfer received	4,395	133	141	381
Interest repayments on mortgage	321	1,046	1,554	30
Income received by people aged under 16	1,846	16	23	340
Regular inter-household cash transfer paid	3,732	131	138	274
Tax on Income and Social Contributions	9,819	697	2,018	278
<i>Net income components at personal level</i>				
Employee cash or near cash income	17,569	1,781	2,094	256
Contributions to individual private pension plans	1,060	782	847	38
Cash benefits or losses from self-employment	15,916	298	368	1,041
Value of goods produced by own-consumption	245	82	93	27
Pension from individual private plans	2,778	6	7	1,498
Unemployment benefits	4,641	222	242	268
Old-age benefits	14,576	920	1,043	265
Survivors' benefits	7,890	30	31	885
Sickness benefits	2,524	62	72	324
Disability benefits	12,737	105	111	597
Education-related allowances	3,191	60	72	416
<i>Gross income components at personal level</i>				
Employee cash or near cash income	25,024	1,262	2,094	451
Contributions to individual private pension plans	1,060	782	847	38
Cash benefits or losses from self-employment	19,958	177	368	1,286
Value of goods produced by own-consumption	245	82	93	27
Pension from individual private plans	2,711	3	7	1,507
Unemployment benefits	4,722	222	242	296
Old-age benefits	17,668	467	1,043	386
Survivors' benefits	9,598	15	31	1,171
Sickness benefits	3,133	33	72	391
Disability benefits	14,765	75	111	811
Education-related allowances	3,191	60	72	416

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Weighted by db090 at household level and pb050 at personal level

Table 6 : Mean, total number of observations (before and after imputation) and standard error for income components 2007 (households & persons, weighted mean, R2/06)

	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Total household gross income	42,938	453	1,731	903
Total disposable household income	32,612	1,126	1,731	639
Total disposable household income before social transfers other than old-age and survivors' benefits	29,858	1,118	1,708	626
Total disposable household income before social transfers including old-age and survivors' benefits	23,709	1,043	1,563	714
<i>Net income components at household level</i>				
Income from rental of a property or land	11,541	72	76	2,909
Family/child related allowances	4,673	579	581	154
Social exclusion not elsewhere classified	2,545	40	42	418
Housing allowances	1,404	63	68	115
Regular inter-household cash transfer received	4,808	124	131	676
Interest, dividends, profit from capital investments	619	928	1,207	121
Income received by people aged under 16	3,006	11	14	775
Regular inter-household cash transfer paid	3,683	118	125	319
Repayments/receipts for tax adjustment	-340	706	725	34
<i>Gross income components at household level</i>				
Income from rental of a property or land	13,752	0	76	3,565
Family/child related allowances	4,673	567	581	154
Social exclusion not elsewhere classified	2,545	40	42	418
Housing allowances	1,404	63	68	115
Regular inter-household cash transfer received	4,808	124	131	676
Interest repayments on mortgage	774	928	1,207	151
Income received by people aged under 16	3,007	8	14	775
Regular inter-household cash transfer paid	3,683	118	125	319
Tax on Income and Social Contributions	10,353	491	1,707	307
<i>Net income components at personal level</i>				
Employee cash or near cash income	17,529	1,511	1,671	319
Contributions to individual private pension plans	1,047	644	709	41
Cash benefits or losses from self-employment	14,337	286	327	1,128
Value of goods produced by own-consumption	598	137	152	85
Pension from individual private plans	2,203	2	3	289
Unemployment benefits	5,353	218	232	412
Old-age benefits	15,503	830	940	327
Survivors' benefits	9,033	20	24	1,070
Sickness benefits	2,103	62	66	318
Disability benefits	12,063	86	89	733
Education-related allowances	2,656	43	46	293
<i>Gross income components at personal level</i>				
Employee cash or near cash income	25,033	891	1,671	536
Contributions to individual private pension plans	1,047	644	709	41
Cash benefits or losses from self-employment	17,393	6	327	1,235
Value of goods produced by own-consumption	598	137	152	85
Pension from individual private plans	2,203	1	3	289
Unemployment benefits	5,583	216	232	514
Old-age benefits	19,028	374	940	482
Survivors' benefits	10,664	10	24	1,320
Sickness benefits	2,540	19	66	369
Disability benefits	13,788	58	89	910
Education-related allowances	2,656	43	46	293

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Weighted by db090 at household level and pb050 at personal level

Table 7 : Mean, total number of observations (before and after imputation) and standard error for income components 2008 (households & persons, weighted mean, R2/06)

	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Total household gross income	45,068	386	1,279	1,043
Total disposable household income	33,189	845	1,279	702
Total disposable household income before social transfers other than old-age and survivors' benefits	30,318	843	1,268	707
Total disposable household income before social transfers including old-age and survivors' benefits	23,512	808	1,182	775
<i>Net income components at household level</i>				
Income from rental of a property or land	7,384	76	77	1,526
Family/child related allowances	5,166	432	434	191
Social exclusion not elsewhere classified	1,147	66	66	334
Housing allowances	1,487	57	60	131
Regular inter-household cash transfer received	4,251	103	106	538
Interest, dividends, profit from capital investments	707	852	991	98
Income received by people aged under 16	3,577	24	27	949
Regular inter-household cash transfer paid	3,869	104	109	424
Repayments/receipts for tax adjustment	-361	631	643	50
<i>Gross income components at household level</i>				
Income from rental of a property or land	8,926	0	77	1,830
Family/child related allowances	5,166	432	434	191
Social exclusion not elsewhere classified	1,147	66	66	334
Housing allowances	1,487	57	60	131
Regular inter-household cash transfer received	4,251	103	106	538
Interest repayments on mortgage	884	852	991	123
Income received by people aged under 16	4,071	19	27	1,206
Regular inter-household cash transfer paid	3,869	104	109	424
Tax on Income and Social Contributions	11,737	462	1,265	389
<i>Net income components at personal level</i>				
Employee cash or near cash income	17,664	1,014	1,268	349
Contributions to individual private pension plans	1,031	548	604	50
Cash benefits or losses from self-employment	12,655	218	247	1,233
Value of goods produced by own-consumption	429	94	98	61
Pension from individual private plans	6,915	9	10	2,608
Unemployment benefits	4,518	145	153	343
Old-age benefits	15,835	638	732	366
Survivors' benefits	9,177	19	20	1,905
Sickness benefits	2,439	64	76	287
Disability benefits	11,267	52	56	767
Education-related allowances	2,047	47	52	406
<i>Gross income components at personal level</i>				
Employee cash or near cash income	25,628	704	1,268	584
Contributions to individual private pension plans	1,031	548	604	50
Cash benefits or losses from self-employment	17,852	5	247	1,798
Value of goods produced by own-consumption	429	94	98	61
Pension from individual private plans	7,063	4	10	2,574
Unemployment benefits	4,549	145	153	345
Old-age benefits	20,300	344	732	513
Survivors' benefits	12,199	6	20	2,693
Sickness benefits	3,096	23	76	366
Disability benefits	13,382	31	56	903
Education-related allowances	2,047	47	52	406

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Weighted by db090 at household level and pb050 at personal level

Table 8 : Mean, total number of observations (before and after imputation) and standard error for income components 2009 (households & persons, weighted mean, R2/06)

	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Total household gross income*	46,674	368	1,152	1,125
Total disposable household income*	34,644	726	1,152	767
Total disposable household income before social transfers other than old-age and survivors' benefits	31,668	727	1,140	777
Total disposable household income before social transfers including old-age and survivors' benefits	24,173	715	1,073	848
<i>Net income components at household level</i>				
Income from rental of a property or land	9,811	54	54	1,637
Family/child related allowances	5,511	366	370	92
Social exclusion not elsewhere classified	369	61	63	81
Housing allowances	1,420	47	51	159
Regular inter-household cash transfer received	3,900	78	84	424
Interest, dividends, profit from capital investments	600	664	868	235
Income received by people aged under 16	4,457	20	21	1,281
Regular inter-household cash transfer paid	3,334	103	110	314
Repayments/receipts for tax adjustment	-325	608	627	54
<i>Gross income components at household level</i>				
Income from rental of a property or land	13,826	0	54	2,689
Family/child related allowances	5,511	366	370	126
Social exclusion not elsewhere classified	369	61	63	81
Housing allowances	1,420	47	51	159
Regular inter-household cash transfer received	3,900	78	84	424
Interest repayments on mortgage	749	664	868	115
Income received by people aged under 16	5,103	8	21	1,659
Regular inter-household cash transfer paid	3,334	103	110	314
Tax on Income and Social Contributions	11,875	394	1,141	408
<i>Net income components at personal level</i>				
Employee cash or near cash income	18,180	900	1,141	368
Contributions to individual private pension plans	1,006	532	580	48
Cash benefits or losses from self-employment	13,197	196	219	1,072
Value of goods produced by own-consumption	835	67	74	170
Pension from individual private plans	11,893	4	5	4,130
Unemployment benefits	5,120	107	119	501
Old-age benefits	16,446	587	686	386
Survivors' benefits	7,353	16	20	1,276
Sickness benefits	1,909	70	84	250
Disability benefits	13,214	45	50	1,171
Education-related allowances	2,026	45	45	402
<i>Gross income components at personal level</i>				
Employee cash or near cash income	26,063	632	1,141	609
Contributions to individual private pension plans	1,006	532	580	48
Cash benefits or losses from self-employment	17,190	3	219	1,309
Value of goods produced by own-consumption	835	67	74	170
Pension from individual private plans	21,961	4	5	7,258
Unemployment benefits	5,151	105	119	504
Old-age benefits	21,188	340	686	581
Survivors' benefits	9,278	7	20	1,630
Sickness benefits	2,579	30	84	339
Disability benefits	16,137	26	50	1,643
Education-related allowances	2,026	45	45	402

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Weighted by db090 at household level and pb050 at personal level

*For one household all income components were recorded as zero and therefore the household was excluded from the table.

Table 9 : Mean, total number of observations (before and after imputation) and standard error for income components of the cross-sectional component 2009 (households & persons, weighted)

	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Total household gross income	47,934	2,256	5,876	514
Total disposable household income	35,085	4,141	5,876	343
Total disposable household income before social transfers other than old-age and survivors' benefits	32,132	4,145	5,811	341
Total disposable household income including old-age and survivors' benefits	25,304	4,024	5,483	378
<i>Net income components at household level</i>				
Income from rental of a property or land	8,160	301	315	748
Family/child related allowances	5,460	1,975	1,989	92
Social exclusion not elsewhere classified	1,303	262	274	204
Housing allowances	1,581	260	272	62
Regular inter-household cash transfer received	4,053	477	498	224
Interest, dividends, profit from capital investments	654	3,477	4,194	45
Income received by people aged under 16	3,548	93	98	566
Regular inter-household cash transfer paid	3,740	594	615	151
Repayments/receipts for tax adjustment	-363	2,968	3,024	26
<i>Gross income components at household level</i>				
Income from rental of a property or land	10,779	0	315	1,182
Family/child related allowances	5,460	1,975	1,989	92
Social exclusion not elsewhere classified	1,303	262	274	204
Housing allowances	1,581	260	272	62
Regular inter-household cash transfer received	4,053	477	498	224
Interest repayments on mortgage	818	3,477	4,194	56
Income received by people aged under 16	4,000	56	98	641
Regular inter-household cash transfer paid	3,740	594	615	151
Tax on Income and Social Contributions	12,617	2,377	5,807	212
<i>Net income components at personal level</i>				
Employee cash or near cash income	18,465	4,930	5,993	179
Contributions to individual private pension plans	1,102	2,742	2,988	33
Cash benefits or losses from self-employment	15,372	1,046	1,183	662
Value of goods produced by own-consumption	750	330	355	86
Pension from individual private plans	5,355	39	43	984
Unemployment benefits	4,113	687	745	144
Old-age benefits	16,572	2,608	2,944	196
Survivors' benefits	7,195	121	128	463
Sickness benefits	2,371	294	345	200
Disability benefits	11,965	263	286	476
Education-related allowances	1,947	222	236	160
<i>Gross income components at personal level</i>				
Employee cash or near cash income	26,633	3,684	5,993	299
Contributions to individual private pension plans	1,102	2,742	2,988	33
Cash benefits or losses from self-employment	21,544	15	1,183	1,019
Value of goods produced by own-consumption	750	330	355	86
Pension from individual private plans	7,128	29	43	1,600
Unemployment benefits	4,152	683	745	147
Old-age benefits	21,364	1,601	2,944	290
Survivors' benefits	9,232	55	128	647
Sickness benefits	3,019	136	345	236
Disability benefits	14,597	173	286	630
Education-related allowances	1,947	222	236	160

Source: Statistics Austria, EU-SILC cross-sectional sample 2009.

Weighted by db090 at household level and pb040 at personal level

Table 10 : Mean, number of observations (before and after imputations) and standard error for the equivalised disposable income 2006 (weighted, R2/06)

Equivalised disposable income	Mean	Number of observations		Standard error	S.E. / Mean
		Before imputation	After imputation		%
By household size					
1 household member	17,176	445	659	361	2.1
2 household members	21,406	718	1,168	556	2.6
3 household members	21,061	579	1,053	604	2.9
4 and more household members	18,394	1,087	2,084	399	2.2
By age groups					
< 25 years	18,103	826	1,485	351	1.9
25 - 34 years	19,493	353	569	454	2.3
35 - 44 years	20,473	442	805	565	2.8
45 - 54 years	21,836	382	714	480	2.2
55 - 64 years	21,710	330	556	647	3.0
65 + years	17,665	496	835	401	2.3
By sex					
Male	19,968	1,336	2,374	293	1.5
Female	19,093	1,493	2,590	249	1.3
Total	19,510	2,829	4,964	254	1.3

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Weighted by rb060

Table 11 : Mean, number of observations (before and after imputations) and standard error for the equivalised disposable income 2007 (weighted, R2/06)

Equivalised disposable income	Mean	Number of observations		Standard error	S.E. / Mean
		Before imputation	After imputation		%
By household size					
1 household member	17,899	402	549	415	2.3
2 household members	22,608	647	1,012	643	2.8
3 household members	21,237	474	807	933	4.4
4 and more household members	18,993	1,029	1,742	447	2.4
By age groups					
< 25 years	18,530	739	1,205	420	2.3
25 - 34 years	20,606	260	438	826	4.0
35 - 44 years	21,104	392	631	777	3.7
45 - 54 years	22,679	367	601	567	2.5
55 - 64 years	21,533	307	488	725	3.4
65 + years	18,873	487	747	462	2.4
By sex					
Male	20,640	1,210	1,961	343	1.7
Female	19,756	1,342	2,149	332	1.7
Total	20,180	2,552	4,110	316	1.6

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Weighted by rb060

Table 12 : Mean, number of observations (before and after imputations) and standard error for the equivalised disposable income 2008 (weighted, R2/06)

Equivalised disposable income	Mean	Number of observations		Standard error	S.E. / Mean
		Before imputation	After imputation		%
By household size					
1 household member	19,028	311	410	540	2.8
2 household members	21,898	528	765	688	3.1
3 household members	21,549	325	541	770	3.6
4 and more household members	20,452	650	1,218	638	3.1
By age groups					
< 25 years	19,429	480	837	533	2.7
25 - 34 years	21,050	149	262	1,065	5.1
35 - 44 years	21,083	268	450	546	2.6
45 - 54 years	23,427	244	436	779	3.3
55 - 64 years	23,105	250	379	838	3.6
65 + years	18,873	423	570	469	2.5
By sex					
Male	21,555	854	1,381	422	2.0
Female	20,161	960	1,553	340	1.7
Total	20,822	1,814	2,934	351	1.7

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Weighted by rb060

Table 13 : Mean, number of observations (before and after imputations) and standard error for the equivalised disposable income 2009 (weighted, R2/06)

Equivalised disposable income	Mean	Number of observations		Standard error	S.E. / Mean
		Before imputation	After imputation		%
By household size					
1 household member	18,851	258	379	591	3.1
2 household members	23,373	471	693	757	3.2
3 household members	23,446	262	467	861	3.7
4 and more household members	20,942	536	1,007	515	2.5
By age groups					
< 25 years	20,285	386	683	460	2.3
25 - 34 years	22,070	139	219	816	3.7
35 - 44 years	22,118	238	383	785	3.5
45 - 54 years	24,056	224	393	679	2.8
55 - 64 years	23,927	197	337	1,015	4.2
65 + years	20,005	343	531	549	2.7
By sex					
Male	22,560	724	1,198	406	1.8
Female	21,012	803	1,348	359	1.7
Total	21,747	1,527	2,546	345	1.6

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Weighted by rb060

Table 14 : Mean, number of observations (before and after imputations) and standard error for the equivalised disposable income for the cross-sectional component 2009 (weighted)

Equivalised disposable income	Mean	Number of observations		Standard error	S.E. / Mean %
		Before imputation	After imputation		
By household size					
1 household member	20,355	1,454	1,897	321	1.6
2 household members	23,869	2,826	3,856	343	1.4
3 household members	23,603	1,728	2,673	448	1.9
4 and more household members	20,844	3,107	5,181	308	1.5
By age groups					
< 25 years	20,398	2,536	3,980	245	1.2
25 - 34 years	21,698	998	1,453	337	1.6
35 - 44 years	22,908	1,503	2,212	374	1.6
45 - 54 years	24,710	1,296	2,039	351	1.4
55 - 64 years	24,093	1,102	1,603	463	1.9
65 + years	20,749	1,680	2,320	299	1.4
By sex					
Male	22,683	4,395	6,538	209	0.9
Female	21,541	4,720	7,069	187	0.9
Total	22,099	9,115	13,607	181	0.8

Source: Statistics Austria, EU-SILC cross-sectional sample 2009

Weighted by rb050

2.3. Non-sampling errors

2.3.1. Sampling frame and coverage errors

The sampling frame for the first wave of the longitudinal component (2006) was the ZMR. The ZMR is a continuously updated population register based on the registration of residence. The register is administered by the federal ministry of the Interior BMI (*Bundesministerium für Inneres*). Data from the ZMR are delivered quarterly to Statistics Austria. For the sampling procedure of EU-SILC 2006 the reference date of the ZMR was December 31st 2005. Addresses already selected for the EU-SILC 2003, EU-SILC 2004 or EU-SILC 2005 survey were excluded from the sample frame.

The ZMR can be expected to provide the most up-to-date representation of the resident population of Austria. Nonetheless the sample contained obsolete units at the time of the fieldwork, mainly due to changes that occurred after the sample had been drawn. These changes were for example persons who emigrated or died or persons who did not report changes of their main residence in time. Other units, such as newly built accommodations could not be included in the sampling frame.

The sampling frame was constructed from the ZMR data in quarterly intervals by aggregation of individuals to dwelling units. The entries of the ZMR comprise information on individuals and there is no key or link to identify all persons that are living in the same dwelling. So the connection of dwelling units had to be constructed by the individual address characteristics. The households constructed in this way are not always correct, mainly because of spelling errors or differences of the spelling of the addresses. However, the ZMR is regarded as the most reliable source for drawing representative samples and is also used in other surveys in Austria like the Microcensus (Labour Force Survey).

2.3.2. Measurement and processing errors

2.3.2.1. Measurement errors

Measurement errors are defined as the difference between the value of a variable (provided by the respondent) and the true but unknown value of a variable. These errors originate from four basic sources:

- the questionnaire (effects of the design, content and wording)
- the data collection method (effects of the modes of interviewing)
- the interviewer (effects of the interviewer on the response to a question including errors of the interviewer)
- the respondents (effects of the respondent on the interpretation of items)

The occurrence of these errors and their effects is almost unavoidable. However, Statistics Austria implemented various methods and procedures to reduce such effects and errors.

The original questionnaires were developed on the basis of the EU-SILC regulations and the EU-SILC doc 65 (*Description of Target Variables: Cross-sectional and Longitudinal*). They are annually adopted and revised according to changes of EUROSTATs requirements and feedback from interviewers or data checking procedures which indicated misinterpretations of particular items.

During the years 2006 to 2007 the data collection was primarily conducted using the CAPI technique (Computer Assisted Personal Interviewing). In a few exceptional cases, when requested by the household, telephone interviews (CATI - Computer Assisted Telephone Interviewing) were conducted during that period. In 2007 a small sample of follow-up interviews was conducted by Statistics Austria instead of the fieldwork institute. The aim of this strategy was to assess the suitability of the CATI technique for long and complex interviews as in EU-SILC.¹³ 280 of these CATI interviews were conducted in the four-year longitudinal rotation R2/06 of EU-SILC 2007. Differences between questionnaire implementations were kept as small as possible.¹⁴ In EU-SILC 2008 the entire fieldwork was taken over by Statistics Austria. Hence the CAPI programming had to be done anew by Statistics Austria. The CATI programming was adapted from previous years' testing of the CATI-technique. In rotation 2/06 771 persons were interviewed with CATI, 915 persons with CAPI and 713 personal interviews were carried out with a proxy¹⁵. In 2009 1,131 CATI interviews, 487 CAPI interviews and 567 Proxy interviews¹⁶ were conducted.

¹³ This was done under a special Eurostat grant, see grant agreement No. 36401.2007.002-2007./90 "EU-SILC impact study on comparability of national implementations".

¹⁴ For a more detailed description of the CATI test see the Austrian intermediate quality report 2007, ch. 2.4.1.

¹⁵ 297 of these proxy interviews used CAPI and 416 used CATI.

¹⁶ 136 of these proxy interviews were conducted with CAPI and 431 with CATI.

The questionnaire was up to 2007 only provided in German. To achieve higher response rates and understanding of migrant households, translations of the questionnaire in Turkish and Bosnian, Serbian and Croatian have been implemented since 2008. Native speaking CATI interviewers were available to conduct these interviews, but also CAPI interviewers could use the translation to solve problems in understanding specific questions for those respondents that had in general sufficient German language abilities by switching to the translation when needed.

To reduce interviewer effects it was necessary to provide the interviewers with sufficient training and support. These helped to ensure that all respondents were interviewed under similar conditions as far as the interviewer behaviour was concerned. During the years 2006-2007 the responsible fieldwork institute conducted the interviewer training in cooperation with the EU-SILC project team of Statistics Austria. In 2006 121 interviewers¹⁷ attended the training sessions. In 2007 the fieldwork institute SPECTRA trained 66 interviewers (76 interviewers provided successful interviews)¹⁸, at Statistics Austria 137 CAPI interviewers and 13 CATI interviewers participated in the training sessions. Given that in 2008 Statistics Austria conducted the whole fieldwork, all interviews were carried out by Statistics Austria. Statistics Austria conducted one day long training sessions for CAPI interviewers that had not yet worked for the EU-SILC survey and half day training sessions for experienced EU-SILC CAPI interviewers. The short session concentrated on changes compared to the previous survey and the module. Half day training sessions were also conducted with CATI interviewers.

Using the CAPI mode 158 interviewers collected information for the EU-SILC 2008 survey all over Austria. 46 telephone interviewers conducted follow-up CATI interviews. In EU-SILC 2009 162 interviewers were engaged in CAPI interviews and 45 interviewers carried out surveys with the CATI technique.

Table 15 below refers only to those persons interviewed in all four waves. In 2007 the rate of proxy interviews rose slightly (18.9%), whereas in 2008 it increased considerably to 27.9% and decreased slightly in 2009 to 25.2%. The higher proxy rates are connected to the usage of CATI interviews since 2008. In 2008 61% and in 2009 78.2% of the proxy interviews were carried out with the CATI technique.

As in the last years, the ratio of proxy interviews varied considerably with the basic activity status of the respondent for whom a proxy interview had to be conducted. Retired and unemployed persons were more likely to give a personal interview (and/or were more accessible for interviews), than people in employment or self-employment.

¹⁷ 15 interviewers in 2006 did not provide any successful interviews.

¹⁸ Ten interviewers of SPECTRA did not participate in the training sessions; these interviewers already interviewed for previous wave of EU-SILC.

Table 15 : Distribution of proxy interviews by activity status and year (persons interviewed in all four waves of R2/06)

	CAPI		CATI		Proxy Interview		Total	
	N	%	N	%	N	%	N	%
<i>2006</i>								
Working	775	79.4	0	0.0	201	20.6	976	100.0
Unemployed	57	90.5	0	0.0	6	9.5	63	100.0
Retired	556	90.0	0	0.0	62	10.0	618	100.0
Other	255	77.3	0	0.0	75	22.7	330	100.0
TOTAL	1,643	82.7	0	0.0	344	17.3	1,987	100.0
<i>2007</i>								
	N	%	N	%	N	%	N	%
Working	648	66.1	128	13.0	205	20.9	981	100.0
Unemployed	41	73.2	6	10.7	9	16.1	56	100.0
Retired	489	75.5	81	12.5	78	12.0	648	100.0
Other	215	65.7	23	7.0	89	27.2	327	100.0
TOTAL	1,393	69.2	238	11.8	381	18.9	2,012	100.0
<i>2008</i>								
	N	%	N	%	N	%	N	%
Working	336	33.9	356	35.9	300	30.2	992	100.0
Unemployed	31	63.3	12	24.5	6	12.2	49	100.0
Retired	303	45.8	239	36.2	119	18.0	661	100.0
Other	105	32.7	76	23.7	140	43.6	321	100.0
TOTAL	775	38.3	683	33.8	565	27.9	2,023	100.0
<i>2009</i>								
	N	%	N	%	N	%	N	%
Working	156	16.2	533	55.5	272	28.3	961	100.0
Unemployed	26	32.5	41	51.3	13	16.3	80	100.0
Retired	210	30.1	367	52.6	121	17.3	698	100.0
Other	57	19.1	135	45.2	107	35.8	299	100.0
TOTAL	449	22.0	1,076	52.8	513	25.2	2,038	100.0

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Activity status = recoded variable pl031

2.3.2.2. Processing errors

As already during the fieldwork, checking of data quality is an important part of the post-data-collection editing process. Basic principles of this process are standardisation and transparency. Hence, all relevant tasks are included in a predefined process and data editing rules are generalized for subgroups to avoid single case solutions. Transparency of data changes is ensured by documentation such as programme code, copies of data files at various stages, flag variables for the collected variables and written documentations and descriptions.

Flags used internally for collected Austrian income variables are:

- 2 not applicable
- 1 no answer and not (yet) imputed
- 1 value according to survey
- 2 value from category imputation
- 3 value from net-gross or gross-net conversion
- 4 value logically deduced
- 5 value statistically imputed with longitudinal method
- 6 value statistically imputed with cross-sectional method
- 7 value from survey was corrected
- 8 value computed from a monthly income (this code applies only to variables of yearly income)

The data editing process consists of several checking procedures and the respective solutions:

- Assessment of unit and item non-response on household level: Households with too much lacking information are not included in the final database.

- Formal data checks (e.g. checking of completeness of data copies, correctness of routings, ranges of entered values): If required new data copies are made. Formal errors in the dataset are either corrected according to the formal requirements or in case of missing data labelled to be imputed later.
- Cross-sectional and longitudinal plausibility checks: Detected implausible values are either recoded, imputed or – for income variables – corrected through net-gross or gross-net conversion.

Imputation and weighting complete the data editing process.

With the final datasets on the macro-level the distribution of income variables and indicators are checked with various data sources (previous EU-SILC waves, ECHP, Microcensus, LFS, HBS, tax statistics and national accounts) to identify implausible distributions due to errors in the data editing process.

Before transmitting the longitudinal datasets to EUROSTAT the EUROSTAT SAS checking programmes were run to detect errors in the computation and coding of target variables. Those required mostly formal corrections as at that point all checking and editing regarding content has already been implemented earlier in the editing process. Cases which were identified by the checking programme as probably implausible but were considered correct were commented and sent to EUROSTAT with the first data transmission.

2.3.3. Non-response errors

2.3.3.1. Achieved sample size

Table 16 : Sample size and accepted interviews (R2/06)

	2006	2007	2008	2009
Accepted household interviews	2,058	1,731	1,279	1,152
<i>Personal Interview accepted</i>				
Number of persons 16 years and older	4,047	3,389	2,474	2,206
Sample Persons	4,047	3,335	2,392	2,076
Co-residents	0	54	82	130

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

2.3.3.2. Unit non-reponse

Table 17 : Indicators of unit non-response (R2/06)

	2006
Address successfully contacted	3,515
Valid addresses selected	3,534
Ra - address contact rate %	99.5%
Number of household interviews completed and accepted for the database	2,058
Number of households at contacted address	3,515
Rh - proportion of completed interviews %	58.5%
NRh - HH non-response rate %	41.5%
Personal interviews completed	4,039
number of eligible individuals	4,047
Rp - individual response rate %	99.8%
NRp - individual non-response rate %	0.2%
Overall individual non-response rate *NRp %	41.9%

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Ra is the ratio of the number of addresses successfully completed to the number of valid addresses selected.

Rh is the ratio of the number of household interviews completed and accepted for the database to the number of eligible households at the contacted address.

Rp is the ratio of the number of personal interviews completed to the number of eligible individuals in the households whose interviews were completed and accepted.

*NRp is the overall individual non-response rate which is computed as follows: $*NRp\% = (1 - Ra * Rh * Rp) * 100$

Table 18 : Household response rate: Comparison of result codes between wave 2 and wave 1 (R2/06)

Sample outcome in wave 2 - 2007													Total
Sample outcome in wave 1 - 2006				DB120 = 22	DB130 = 22	DB130 = 23	DB130 = 24	DB130 = 21	DB120=21	NC	DB110 = 10	DB120 = 23	
				DB130 = 11	DB135 = 1	DB135 = 2							
2006	DB130 = 11	DB135 = 1	1,703	0	52	11	5	218	1	66	0	2	2,058
		DB135 = 2	0	0	0	0	0	0	0	0	0	0	0
	DB120 = 21												0
	DB120 = 22												0
	DB120 = 23												0
	DB130 = 21												0
	DB130 = 22												0
	DB130 = 23												0
	DB130 = 24												0
Total			1,703	0	0	52	11	5	218	1	66	0	2,058
New Households in wave 2 - 2007													
2007	DB110 = 8	28	0	0	5	0	0	7	27	NA	NA	0	67
	DB110 = 9	0	0	0	0	0	0	0	0	NA	NA	0	0
Total			1,731	0	0	57	11	5	225	28	66	0	2,125

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

NC: Not contacted; db110 in (3,4,5,6,7,11)

Response rates for households wave 2 and wave 1 (R2/06):

wave response rate	0.815	Ratio of successfully interviewed households which were followed up from wave 1 to wave 2 to all followed up households in wave 2.
long follow up rate	0.861	Percentage of contacted households within the households received into wave 2 from wave 1, excluding those out of scope or non-existent.
follow-up ratio	0.877	Number of contacted households in comparison to the number of households received for follow-up at wave 2 from wave 1.
achieved sample size ratio	0.841	Ratio of the number of households accepted for the database in wave 2 to the number of households accepted for the database in wave 1.

Table 19 : Household response rate: Comparison of result codes between wave 3 and wave 2 (R2/06)

				Sample outcome in wave 3 - 2008									Total	
DB130 = 11														
DB135 = 1 DB135 = 2				DB120 = 22	DB130 = 22	DB130 = 23	DB130 = 24	DB130 = 21	DB120=21	NC	DB110 = 10	DB120 = 23		
Sample outcome in wave 2 - 2007														
2007	DB130 = 11	DB135 = 1	1,254	0	0	48	7	1	235	14	63	0	3	1,625*
		DB135 = 2	0	0	0	0	0	0	0	0	0	0	0	0
	DB120 = 22													0
	DB130 = 22													0
	DB130 = 23													0
	DB130 = 24													0
Total			1,254	0	0	48	7	1	235	14	63	0	3	1,625*
New Households in wave 3 - 2008														
2008	DB110 = 8	25	0	0	7	0	0	12	9	NA	NA	1	54	
	DB110 = 9	0	0	0	0	0	0	0	0	NA	NA	0	0	
Total			1,279	0	0	55	7	1	247	23	63	0	4	1,679

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

NC: Not contacted; db110 in (3,4,5,6,7,11)

*In 2008 the number of follow-up households was reduced to 1,625 households. Compare: Intermediate quality report 2008 ch. 2.1.3

Response rates for households wave 3 and wave 2 (R2/06):

wave response rate	0.764	Ratio of successfully interviewed households which were followed up from wave 2 to wave 3 to all followed up households in wave 3.
long follow up rate	0.808	Percentage of contacted households within the households received into wave 3 from wave 2, excluding those out of scope or non-existent.
follow-up ratio	0.827	Number of contacted households in comparison to the number of households received for follow-up at wave 3 from wave 2.
achieved sample size ratio	0.787	Ratio of the number of households accepted for the database in wave 3 to the number of households accepted for the database in wave 2.

Table 20 : Household response rate: Comparison of result codes between wave 4 and wave 3 (R2/06)

Sample outcome in wave 4 - 2009														Total
DB130 = 11														
DB135 = 1 DB135 = 2					DB120 = 22	DB130 = 22	DB130 = 23	DB130 = 24	DB130 = 21	DB120=21	NC	DB110 = 10	DB120 = 23	
Sample outcome in wave 3 - 2008														
2008	DB130 = 11	DB135 = 1	1,130	0	0	38	13	0	71	1	25	1	0	1,279
		DB135 = 2	0	0	0	0	0	0	0	0	0	0	0	0
	DB120 = 22													0
	DB130 = 22													0
	DB130 = 23													0
	DB130 = 24													0
	Total		1,130	0	0	38	13	0	71	1	25	1	0	1,279
New Households in wave 4 - 2009														
2009	DB110 = 8	22			0	3	0	1	5	9	NA	NA	0	40
	DB110 = 9				0	0	0	0	0	0	NA	NA	0	0
Total					0	41	13	1	76	10	25	1	0	1,319

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

NC: Not contacted; db110 in (3,4,5,6,7,11)

Response rates for households wave 4 and wave 3 (R2/06):

wave response rate	0.873	Ratio of successfully interviewed households which were followed up from wave 3 to wave 4 to all followed up households in wave 4.
long follow up rate	0.923	Percentage of contacted households within the households received into wave 4 from wave 3, excluding those out of scope or non-existent.
follow-up ratio	0.944	Number of contacted households in comparison to the number of households received for follow-up at wave 4 from wave 3.
achieved sample size ratio	0.901	Ratio of the number of households accepted for the database in wave 4 to the number of households accepted for the database in wave 3.

Table 21 : Personal Interview outcome in wave 2 (R2/06)

2007														
Not completed because of														
		RB250 = 11,12,13	RB250=14 *							HHnc		Pn	PI	TOTAL
				RB250 = 21	RB250 = 22	RB250 = 23	RB250 = 31	RB250 = 32	RB250 = 33	HHnc1	HHnc2			
Row	Sample persons forwarded from last wave													
1	RB110 = 1-2	3243	7	0	0	0	0	0	0					3250
2	RB110 = 6													18
3	RB110 = -1													0
4	RB120 = 2													3
5	RB120 = 3													10
6	RB120 = 4													12
7	DB135 = 2 or -1, or DB110 = 7, or DB120 = 21-23 or -1, or DB130 == 21-24 or -1													2
8	DB110 = 3-6													0
New Sample Persons														
9	Reached age 16	51	0	0	0	0	0	0	0	0	0	0	0	51
10	Sample additions	0	0	0	0	0	0	0	0					0
Non-Sample persons 16+														
11	From wave 1 - 2006	0	0	0	0	0	0	0	0	0	0	0	0	0
	From wave 2 - 2007	53	1	0	0	0	0	0	0	0	0	0	0	54
Sample persons not forwarded from last wave (excluded died or not eligible according to tracing rules)														
13	From 2006													47
Sum of Rows														
	1+3+6+7+9+10	3294	7	0	0	0	0	0	0	0	0	0	0	3315
	1+3+6+7+9+10+13	3294	7	0	0	0	0	0	0	0	0	0	0	3362
	1+3+6+7+9+10+11	3347	8	0	0	0	0	0	0	0	0	0	0	3369

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

* Interviews not completed, though contact was made, data completed by imputation

Response rates for persons wave 2 and wave 1 (R2/06):

wave response rate of sample persons	0.994	achieved sample size ratio for sample persons	0.782
wave response rate of co-residents	n.a.	achieved sample size ratio for sample persons and coresidents	0.795
longitudinal follow-up rate	0.980	achieved sample size ratio for co-residents selected in previous wave	n.a.
R(RB250=14)	0.002	response rate for non-sample persons	0.981

Table 22 : Personal Interview outcome in wave 3 (R2/06)

2008														
Not completed because of														
		RB250 = 11,12,13	RB250=14 *							HHnc		Pn	PI	TOTAL
				RB250 = 21	RB250 = 22	RB250 = 23	RB250 = 31	RB250 = 32	RB250 = 33	HHnc1	HHnc2			
Row	Sample persons forwarded from last wave													
1	RB110 = 1-2	2286	33	0	0	0	0	0	0					2319
2	RB110 = 6													14
3	RB110 = -1													0
4	RB120 = 2													7
5	RB120 = 3													5
6	RB120 = 4													4
7	DB135 = 2 or -1, or DB110 = 7, or DB120 = 21-23 or -1, or DB130 == 21-24 or -1													1
8	DB110 = 3-6													0
New Sample Persons														
9	Reached age 16	43	0	0	0	0	0	0	0	0	0	0	0	43
10	Sample additions	0	0	0	0	0	0	0	0					0
Non-Sample persons 16+														
11	From wave 2 - 2007	26	0	0	0	0	0	0	0	0	0	0	0	26
	From wave 3 - 2008	50	6	0	0	0	0	0	0	0	0	0	0	56
Sample persons not forwarded from last wave (excluded died or not eligible according to tracing rules)														
13	From 2007													33
Sum of Rows														
1+3+6+7+9+10		2329	33	0	0	0	0	0	0	0	0	0	0	2367
1+3+6+7+9+10+13		2329	33	0	0	0	0	0	0	0	0	0	0	2400
1+3+6+7+9+10+11		2379	39	0	0	0	0	0	0	0	0	0	0	2423

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

* Interviews not completed, though contact was made, data completed by imputation

Response rates for persons wave 3 and wave 2 (R2/06):

wave response rate of sample persons	0.984	achieved sample size ratio for sample persons	0.782
wave response rate of co-residents	1.000	achieved sample size ratio for sample persons and coresidents	0.799
longitudinal follow-up rate	0.970	achieved sample size ratio for co-residents selected in previous wave	0.491
R(RB250=14)	0.014	response rate for non-sample persons	0.927

Table 23 : Personal Interview outcome in wave 4 (R2/06)

2009														
Not completed because of														
		RB250 = 11,12,13	RB250=14 *							HHnc		Pn	PI	TOTAL
					RB250 = 21	RB250 = 22	RB250 = 23	RB250 = 31	RB250 = 32	RB250 = 33	HHnc1	HHnc2		
Row	Sample persons forwarded from last wave													
1	RB110 = 1-2	2033	16	0	0	0	0	0	0	0				2049
2	RB110 = 6													6
3	RB110 = -1													0
4	RB120 = 2													2
5	RB120 = 3													5
6	RB120 = 4													0
7	DB135 = 2 or -1, or DB110 = 7, or DB120 = 21-23 or -1, or DB130 == 21-24 or -1													1
8	DB110 = 3-6													0
New Sample Persons														
9	Reached age 16	34	1	0	0	0	0	0	0	0	0	0	0	35
10	Sample additions	0	0	0	0	0	0	0	0	0				0
Non-Sample persons 16+														
11	From wave 3 - 2008	55	4	0	0	0	0	0	0	0	0	0	0	59
	From wave 4 - 2009	67	4	0	0	0	0	0	0	0	0	0	0	71
Sample persons not forwarded from last wave (excluded died or not eligible according to tracing rules)														
13	From 2008													17
Sum of Rows														
1+3+6+7+9+10		2067	17	0	0	0	0	0	0	0	0	0	0	2085
1+3+6+7+9+10+13		2067	17	0	0	0	0	0	0	0	0	0	0	2102
1+3+6+7+9+10+11		2134	21	0	0	0	0	0	0	0	0	0	0	2156

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

* Interviews not completed, though contact was made, data completed by imputation

Response rates for persons wave 4 and wave 3 (R2/06):

wave response rate of sample persons	0.991	achieved sample size ratio for sample persons	0.791
wave response rate of co-residents	0.932	achieved sample size ratio for sample persons and coresidents	0.817
longitudinal follow-up rate	0.983	achieved sample size ratio for co-residents selected in previous wave	0.724
R(RB250=14)	0.008	response rate for non-sample persons	0.938

2.3.3.3. Distribution of households by household status (DB110), by record of contact at the address (DB120), by household questionnaire result (DB130) and by household interview acceptance (DB135)

Table 24 : Distribution of households by household status (R2/06)

	db110											
	Total	1	2	3	4	5	6	7	8	9	10	11
2006												
Total	3,588	0	0	0	0	0	0	0	0	3,588	0	0
%	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
2007												
Total	2,125	1895	97	2	8	9	2	32	67	0	0	13
%	100.0	89.2	4.6	0.1	0.4	0.4	0.1	1.5	3.2	0.0	0.0	0.6
2008												
Total	1,679	1493	69	5	1	16	0	0	54	0	0	41
%	100.0	88.9	4.1	0.3	0.1	1.0	0.0	0.0	3.2	0.0	0.0	2.4
2009												
Total	1,319	1220	33	5	2	12	0	0	40	0	1	6
%	100.0	92.5	2.5	0.4	0.2	0.9	0.0	0.0	3.0	0.0	0.1	0.5

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 25 : Distribution of households by contact at address (R2/06)

		db120					
	Total	11	21	22	23	24	Missing
2006							
Total	3,588	3515	17	2	54	0	0
%	100.0	98.0	0.5	0.1	1.5	0.0	0.0
2007							
Total	2,125	134	28	0	2	0	1,961
%	100.0	6.3	1.3	0.0	0.1	0.0	92.3
2008							
Total	1,679	96	23	0	4	0	1,556
%	100.0	5.7	1.4	0.0	0.2	0.0	92.7
2009							
Total	1,319	63	10	0	0	0	1,246
%	100.0	4.8	0.8	0.0	0.0	0.0	94.5

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 26 : Distribution of households by household questionnaire result (R2/06)

	db130						
	Total	11	21	22	23	24	Missing
2006							
Total	3,588	2,058	985	397	68	7	73
%	100.0	57.4	27.5	11.1	1.9	0.2	2.0
2007							
Total	2,125	1,731	225	57	11	5	96
%	100.0	81.5	10.6	2.7	0.5	0.2	4.5
2008							
Total	1,679	1,279	247	55	7	1	90
%	100.0	76.2	14.7	3.3	0.4	0.1	5.4
2009							
Total	1,318	1152	76	41	13	0	36
%	100.0	87.4	5.8	3.1	1.0	0.0	2.7

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 27 : Distribution of households by household interview acceptance (R2/06)

		db135		
	Total	1	2	Missing
2006				
Total	3,588	2,058	0	1,530
%	100.0	57.4	0.0	42.6
2007				
Total	2,125	1,731	0	394
%	100.0	81.5	0.0	18.5
2008				
Total	1,679	1,279	0	400
%	100.0	76.2	0.0	23.8
2009				
Total	1,319	1,152	0	167
%	100.0	87.3	0.0	12.7

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

2.3.3.4. Distribution of persons for membership status

The following tables are provided for the second, third and fourth wave of the EU-SILC longitudinal component.

Table 28 : Distribution of persons by membership status (R2/06)

	Total	Current household members				Not current household members		
		RB110 = 1	RB110 = 2	RB110 = 3	RB110 = 4	RB110 = 5	RB110 = 6	RB110 = 7
2007	4,301	4,039	37	56	37	110	18	4
%	100.0	93.9	0.9	1.3	0.9	2.6	0.4	0.1
2008	3,135	2,910	29	71	25	77	15	8
%	100.0	106.3	1.1	2.6	0.9	2.8	0.5	0.3
2009	2,738	2,584	30	39	12	63	6	4
%	100.0	94.4	1.1	1.4	0.4	2.3	0.2	0.1

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 29 : Distribution of persons moving out by variable RB120 (R2/06)

	RB110 = 5					
	RB120 = 1			Not current household members		
	This person is a current household member of another household this wave		This person is not a current household member			
	Total			RB120 = 2	RB120 = 3	RB120 = 4
2007	110	35	46	3	12	14
%	100	31.8	41.8	2.7	10.9	12.7
2008	77	27	32	7	6	5
%	100	35.1	41.6	9.1	7.8	6.5
2009	63	22	30	2	6	3
%	100	34.9	47.6	3.2	9.5	4.8

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

2.3.3.5. Item non-response

The following tables provide an overview of non-response on household and individual level. For every income component the total number of households/persons having received the component is given and a breakdown with regard to the completeness of the information is shown. The percentages next to the totals in the first column refer to the ratio of the number of households/persons having received an amount of the respective income component compared to the number of all completed household or personal interviews (i.e. DB135=1 or RB245 in [11;12;13;14]). The tables cover the dataset for each wave and for each wave the fraction interviewed in all four waves.

Table 30 : Information on item non-response on household level – households 2006 (R2/06)

		Households having received an amount		Full information		Partial information		Missing information	
		Total	% of all interviewed households	Total	%	Total	%	Total	%
<i>Household incomes</i>									
HY010	Total household gross income	2,058	100.0	704	34.2	1,188	57.7	166	8.1
HY020	Total disposable household income	2,058	100.0	1,239	60.2	787	38.2	32	1.6
HY022	Total disposable household income before social transfers other than old-age and survivors' benefits	2,033	98.8	1,231	60.6	758	37.3	44	2.2
HY023	Total disposable household income including old-age and survivors' benefits	1,901	92.4	1,170	61.5	587	30.9	144	7.6
<i>Net income components at household level</i>									
HY040N	Income from rental of a property or land	75	3.6	66	88.0	0	0.0	9	12.0
HY050N	Family/child related allowances	683	33.2	678	99.3	4	0.6	1	0.1
HY060N	Social exclusion not elsewhere classified	47	2.3	47	100.0	0	0.0	0	0.0
HY070N	Housing allowances	74	3.6	71	95.9	2	2.7	1	1.4
HY080N	Regular inter-household cash transfer received	141	6.9	133	94.3	0	0.0	8	5.7
HY090N	Interest, dividends, profit from capital investments	1,554	75.5	1,046	67.3	90	5.8	418	26.9
HY110N	Income received by people aged under 16	23	1.1	18	78.3	0	0.0	5	21.7
HY130N	Regular inter-household cash transfer paid	138	6.7	131	94.9	2	1.4	5	3.6
HY145N	Repayments/receipts for tax adjustment	6	0.3	748	99.3	4	0.5	1	0.1
<i>Gross income components at household level</i>									
HY040G	Income from rental of a property or land	75	3.6	39	52.0	14	18.7	22	29.3
HY050G	Family/child related allowances	683	33.2	678	99.3	4	0.6	1	0.1
HY060G	Social exclusion not elsewhere classified	47	2.3	47	100.0	0	0.0	0	0.0
HY070G	Housing allowances	74	3.6	71	95.9	2	2.7	1	1.4
HY080G	Regular inter-household cash transfer received	141	6.9	133	94.3	0	0.0	8	5.7
HY090G	Interest, dividends, profit from capital investments	1,554	75.5	1,046	67.3	90	5.8	418	26.9
HY110G	Income received by people aged under 16	23	1.1	16	69.6	0	0.0	7	30.4
HY130G	Regular inter-household cash transfer paid	138	6.7	131	94.9	2	1.4	5	3.6
HY140G	Tax on Income and Social Contributions	2,018	98.1	697	34.5	1,239	61.4	82	4.1

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 31 : Information on item non-response on household level – households 2007 (R2/06)

		Households having received an amount		Full information		Partial information		Missing information	
		Total	% of all interviewed households	Total	%	Total	%	Total	%
<i>Household incomes</i>									
HY010	Total household gross income	1,731	100.0	453	26.2	1,127	65.1	151	8.7
HY020	Total disposable household income	1,731	100.0	1,126	65.0	597	34.5	8	0.5
HY022	Total disposable household income before social transfers other than old-age and survivors' benefits	1,708	98.7	1,118	65.5	576	33.7	14	0.8
HY023	Total disposable household income including old-age and survivors' benefits	1,563	90.3	1,043	66.7	452	28.9	68	4.4
<i>Net income components at household level</i>									
HY040N	Income from rental of a property or land	76	4.4	72	94.7	0	0.0	4	5.3
HY050N	Family/child related allowances	581	33.6	579	99.7	2	0.3	0	0.0
HY060N	Social exclusion not elsewhere classified	42	2.4	40	95.2	1	2.4	1	2.4
HY070N	Housing allowances	68	3.9	63	92.6	3	4.4	2	2.9
HY080N	Regular inter-household cash transfer received	131	7.6	124	94.7	1	0.8	6	4.6
HY090N	Interest, dividends, profit from capital investments	1,207	69.7	928	76.9	48	4.0	231	19.1
HY110N	Income received by people aged under 16	14	0.8	11	78.6	0	0.0	3	21.4
HY130N	Regular inter-household cash transfer paid	125	7.2	118	94.4	1	0.8	6	4.8
HY145N	Repayments/receipts for tax adjustment	6	0.4	706	97.4	7	1.0	12	1.7
<i>Gross income components at household level</i>									
HY040G	Income from rental of a property or land	76	4.4	0	0.0	0	0.0	76	100.0
HY050G	Family/child related allowances	581	33.6	567	97.6	10	1.7	4	0.7
HY060G	Social exclusion not elsewhere classified	42	2.4	40	95.2	1	2.4	1	2.4
HY070G	Housing allowances	68	3.9	63	92.6	3	4.4	2	2.9
HY080G	Regular inter-household cash transfer received	131	7.6	124	94.7	1	0.8	6	4.6
HY090G	Interest, dividends, profit from capital investments	1,207	69.7	928	76.9	48	4.0	231	19.1
HY110G	Income received by people aged under 16	14	0.8	8	57.1	0	0.0	6	42.9
HY130G	Regular inter-household cash transfer paid	125	7.2	118	94.4	1	0.8	6	4.8
HY140G	Tax on Income and Social Contributions	1,707	98.6	491	28.8	1,188	69.6	28	1.6

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 32 : Information on item non-response on household level – households 2008 (R2/06)

		Households having received an amount		Full information		Partial information		Missing information	
		Total	% of all interviewed households	Total	%	Total	%	Total	%
<i>Household incomes</i>									
HY010	Total household gross income	1,279	100.0	386	30.2	817	63.9	76	5.9
HY020	Total disposable household income	1,279	100.0	845	66.1	430	33.6	4	0.3
HY022	Total disposable household income before social transfers other than old-age and survivors' benefits	1,268	99.1	843	66.5	415	32.7	10	0.8
HY023	Total disposable household income including old-age and survivors' benefits	1,182	92.4	808	68.4	343	29.0	31	2.6
<i>Net income components at household level</i>									
HY040N	Income from rental of a property or land	77	6.0	76	98.7	0	0.0	1	1.3
HY050N	Family/child related allowances	434	33.9	432	99.5	2	0.5	0	0.0
HY060N	Social exclusion not elsewhere classified	66	5.2	66	100.0	0	0.0	0	0.0
HY070N	Housing allowances	60	4.7	57	95.0	3	5.0	0	0.0
HY080N	Regular inter-household cash transfer received	106	8.3	103	97.2	0	0.0	3	2.8
HY090N	Interest, dividends, profit from capital investments	991	77.5	852	86.0	48	4.8	91	9.2
HY110N	Income received by people aged under 16	27	2.1	24	88.9	1	3.7	2	7.4
HY130N	Regular inter-household cash transfer paid	109	8.5	104	95.4	3	2.8	2	1.8
HY145N	Repayments/receipts for tax adjustment	6	0.5	631	98.1	6	0.9	6	0.9
<i>Gross income components at household level</i>									
HY040G	Income from rental of a property or land	77	6.0	0	0.0	0	0.0	77	100.0
HY050G	Family/child related allowances	434	33.9	432	99.5	2	0.5	0	0.0
HY060G	Social exclusion not elsewhere classified	66	5.2	66	100.0	0	0.0	0	0.0
HY070G	Housing allowances	60	4.7	57	95.0	3	5.0	0	0.0
HY080G	Regular inter-household cash transfer received	106	8.3	103	97.2	0	0.0	3	2.8
HY090G	Interest, dividends, profit from capital investments	991	77.5	852	86.0	48	4.8	91	9.2
HY110G	Income received by people aged under 16	27	2.1	19	70.4	1	3.7	7	25.9
HY130G	Regular inter-household cash transfer paid	109	8.5	104	95.4	3	2.8	2	1.8
HY140G	Tax on Income and Social Contributions	1,265	98.9	462	36.5	792	62.6	11	0.9

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 33 : Information on item non-response on household level – households 2009 (R2/06)

		Households having received an amount		Full information		Partial information		Missing information	
		Total	% of all interviewed households	Total	%	Total	%	Total	%
<i>Household incomes</i>									
HY010	Total household gross income*	1,152	100.0	368	31.9	707	61.4	77	6.7
HY020	Total disposable household income*	1,152	100.0	726	63.0	412	35.8	14	1.2
HY022	Total disposable household income before social transfers other than old-age and survivors' benefits	1,140	99.0	727	63.8	396	34.7	17	1.5
HY023	Total disposable household income including old-age and survivors' benefits	1,073	93.1	715	66.6	310	28.9	48	4.5
<i>Net income components at household level</i>									
HY040N	Income from rental of a property or land	54	4.7	54	100.0	0	0.0	0	0.0
HY050N	Family/child related allowances	370	32.1	366	98.9	4	1.1	0	0.0
HY060N	Social exclusion not elsewhere classified	63	5.5	61	96.8	1	1.6	1	1.6
HY070N	Housing allowances	51	4.4	47	92.2	4	7.8	0	0.0
HY080N	Regular inter-household cash transfer received	84	7.3	78	92.9	2	2.4	4	4.8
HY090N	Interest, dividends, profit from capital investments	868	75.3	664	76.5	73	8.4	131	15.1
HY110N	Income received by people aged under 16	21	1.8	20	95.2	0	0.0	1	4.8
HY130N	Regular inter-household cash transfer paid	110	9.5	103	93.6	5	4.5	2	1.8
HY145N	Repayments/receipts for tax adjustment	6	0.5	608	97.0	3	0.5	16	2.6
<i>Gross income components at household level</i>									
HY040G	Income from rental of a property or land	54	4.7	0	0.0	0	0.0	54	100.0
HY050G	Family/child related allowances	370	32.1	366	98.9	4	1.1	0	0.0
HY060G	Social exclusion not elsewhere classified	63	5.5	61	96.8	1	1.6	1	1.6
HY070G	Housing allowances	51	4.4	47	92.2	4	7.8	0	0.0
HY080G	Regular inter-household cash transfer received	84	7.3	78	92.9	2	2.4	4	4.8
HY090G	Interest, dividends, profit from capital investments	868	75.3	664	76.5	73	8.4	131	15.1
HY110G	Income received by people aged under 16	21	1.8	8	38.1	0	0.0	13	61.9
HY130G	Regular inter-household cash transfer paid	110	9.5	103	93.6	5	4.5	2	1.8
HY140G	Tax on Income and Social Contributions	1,141	99.0	394	34.5	728	63.8	19	1.7

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 34 : Information on item non-response on individual level – persons 2006 (R2/06)

		Persons having received an amount		Full information		Partial information		Missing information	
		Total	%	Total	%	Total	%	Total	%
<i>Net income components at personal level</i>									
PY010N	Employee cash or near cash income	2,094	53.6	1,781	85.1	176	8.4	137	6.5
PY035N	Contributions to individual private pension plans	847	21.7	782	92.3	0	0.0	65	7.7
PY050N	Cash benefits or losses from self-employment	368	9.4	298	81.0	11	3.0	59	16.0
PY070N	Value of goods produced by own-consumption	93	2.4	82	88.2	0	0.0	11	11.8
PY080N	Pension from individual private plans	7	0.2	6	85.7	0	0.0	1	14.3
PY090N	Unemployment benefits	242	6.2	222	91.7	6	2.5	14	5.8
PY100N	Old-age benefits	1,043	26.7	920	88.2	62	5.9	61	5.8
PY110N	Survivors' benefits	31	0.8	30	96.8	0	0.0	1	3.2
PY120N	Sickness benefits	72	1.8	62	86.1	2	2.8	8	11.1
PY130N	Disability benefits	111	2.8	105	94.6	0	0.0	6	5.4
PY140N	Education-related allowances	72	1.8	60	83.3	1	1.4	11	15.3
<i>Gross income components at personal level</i>									
PY010G	Employee cash or near cash income	2,094	53.6	1,262	60.3	139	6.6	693	33.1
PY035G	Contributions to individual private pension plans	847	21.7	782	92.3	0	0.0	65	7.7
PY050G	Cash benefits or losses from self-employment	368	9.4	177	48.1	19	5.2	172	46.7
PY070G	Value of goods produced by own-consumption	6	0.2	82	88.2	0	0.0	11	11.8
PY080G	Pension from individual private plans	7	0.2	3	42.9	0	0.0	4	57.1
PY090G	Unemployment benefits	242	6.2	222	91.7	6	2.5	14	5.8
PY100G	Old-age benefits	1,043	26.7	467	44.8	229	22.0	347	33.3
PY110G	Survivor's benefits	31	0.8	15	48.4	9	29.0	7	22.6
PY120G	Sickness benefits	72	1.8	33	45.8	14	19.4	25	34.7
PY130G	Disability benefits	111	2.8	75	67.6	8	7.2	28	25.2
PY140G	Education-related allowances	72	1.8	60	83.3	1	1.4	11	15.3

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 35 : Information on item non-response on individual level – persons 2007 (R2/06)

		Persons having received an amount		Full information		Partial information		Missing information	
		Total	%	Total	%	Total	%	Total	%
<i>Net income components at personal level</i>									
PY010N	Employee cash or near cash income	1,713	50.7	1,546	90.3	117	6.8	50	2.9
PY035N	Contributions to individual private pension plans	722	21.4	657	91.0	0	0.0	65	9.0
PY050N	Cash benefits or losses from self-employment	332	9.8	291	87.7	3	0.9	38	11.4
PY070N	Value of goods produced by own-consumption	154	4.6	139	90.3	0	0.0	15	9.7
PY080N	Pension from individual private plans	4	0.1	3	75.0	0	0.0	1	25.0
PY090N	Unemployment benefits	240	7.1	225	93.8	8	3.3	7	2.9
PY100N	Old-age benefits	944	27.9	833	88.2	72	7.6	39	4.1
PY110N	Survivors' benefits	25	0.7	20	80.0	0	0.0	5	20.0
PY120N	Sickness benefits	67	2.0	62	92.5	2	3.0	3	4.5
PY130N	Disability benefits	90	2.7	87	96.7	1	1.1	2	2.2
PY140N	Education-related allowances	46	1.4	43	93.5	0	0.0	3	6.5
<i>Gross income components at personal level</i>									
PY010G	Employee cash or near cash income	1,713	50.7	913	53.3	94	5.5	706	41.2
PY035G	Contributions to individual private pension plans	722	21.4	657	91.0	0	0.0	65	9.0
PY050G	Cash benefits or losses from self-employment	332	9.8	6	1.8	8	2.4	318	95.8
PY070G	Value of goods produced by own-consumption	6	0.2	139	90.3	0	0.0	15	9.7
PY080G	Pension from individual private plans	4	0.1	2	50.0	0	0.0	2	50.0
PY090G	Unemployment benefits	240	7.1	223	92.9	9	3.8	8	3.3
PY100G	Old-age benefits	944	27.9	375	39.7	176	18.6	393	41.6
PY110G	Survivor's benefits	25	0.7	10	40.0	5	20.0	10	40.0
PY120G	Sickness benefits	67	2.0	19	28.4	5	7.5	43	64.2
PY130G	Disability benefits	90	2.7	58	64.4	12	13.3	20	22.2
PY140G	Education-related allowances	46	1.4	43	93.5	0	0.0	3	6.5

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 36 : Information on item non-response on individual level – persons 2008 (R2/06)

		Persons having received an amount		Full information		Partial information		Missing information	
		Total	%	Total	%	Total	%	Total	%
<i>Net income components at personal level</i>									
PY010N	Employee cash or near cash income	1,268	42.0	1,014	80.0	183	14.4	71	5.6
PY035N	Contributions to individual private pension plans	604	20.0	548	90.7	0	0.0	56	9.3
PY050N	Cash benefits or losses from self-employment	247	8.2	218	88.3	2	0.8	27	10.9
PY070N	Value of goods produced by own-consumption	98	3.2	94	95.9	0	0.0	4	4.1
PY080N	Pension from individual private plans	10	0.3	9	90.0	0	0.0	1	10.0
PY090N	Unemployment benefits	153	5.1	145	94.8	2	1.3	6	3.9
PY100N	Old-age benefits	732	24.2	638	87.2	59	8.1	35	4.8
PY110N	Survivors' benefits	20	0.7	19	95.0	0	0.0	1	5.0
PY120N	Sickness benefits	76	2.5	64	84.2	4	5.3	8	10.5
PY130N	Disability benefits	56	1.9	52	92.9	2	3.6	2	3.6
PY140N	Education-related allowances	52	1.7	47	90.4	4	7.7	1	1.9
<i>Gross income components at personal level</i>									
PY010G	Employee cash or near cash income	1,268	42.0	704	55.5	149	11.8	415	32.7
PY035G	Contributions to individual private pension plans	604	20.0	548	90.7	0	0.0	56	9.3
PY050G	Cash benefits or losses from self-employment	247	8.2	5	2.0	10	4.0	232	93.9
PY070G	Value of goods produced by own-consumption	6	0.2	94	95.9	0	0.0	4	4.1
PY080G	Pension from individual private plans	10	0.3	4	40.0	0	0.0	6	60.0
PY090G	Unemployment benefits	153	5.1	145	94.8	2	1.3	6	3.9
PY100G	Old-age benefits	732	24.2	344	47.0	133	18.2	255	34.8
PY110G	Survivor's benefits	20	0.7	6	30.0	5	25.0	9	45.0
PY120G	Sickness benefits	76	2.5	23	30.3	10	13.2	43	56.6
PY130G	Disability benefits	56	1.9	31	55.4	4	7.1	21	37.5
PY140G	Education-related allowances	52	1.7	47	90.4	4	7.7	1	1.9

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 37 : Information on item non-response on individual level – persons 2009 (R2/06)

		Persons having received an amount		Full information		Partial information		Missing information	
		Total	%	Total	%	Total	%	Total	%
<i>Net income components at personal level</i>									
PY010N	Employee cash or near cash income	1,141	52.2	900	78.9	168	14.7	73	6.4
PY035N	Contributions to individual private pension plans	580	26.6	532	91.7	0	0.0	48	8.3
PY050N	Cash benefits or losses from self-employment	219	10.0	196	89.5	2	0.9	21	9.6
PY070N	Value of goods produced by own-consumption	74	3.4	67	90.5	0	0.0	7	9.5
PY080N	Pension from individual private plans	5	0.2	4	80.0	1	20.0	0	0.0
PY090N	Unemployment benefits	119	5.4	107	89.9	4	3.4	8	6.7
PY100N	Old-age benefits	686	31.4	587	85.6	60	8.7	39	5.7
PY110N	Survivors' benefits	20	0.9	16	80.0	0	0.0	4	20.0
PY120N	Sickness benefits	84	3.8	70	83.3	2	2.4	12	14.3
PY130N	Disability benefits	50	2.3	45	90.0	0	0.0	5	10.0
PY140N	Education-related allowances	45	2.1	45	100.0	0	0.0	0	0.0
<i>Gross income components at personal level</i>									
PY010G	Employee cash or near cash income	1,141	52.2	632	55.4	131	11.5	378	33.1
PY035G	Contributions to individual private pension plans	580	26.6	532	91.7	0	0.0	48	8.3
PY050G	Cash benefits or losses from self-employment	219	10.0	3	1.4	3	1.4	213	97.3
PY070G	Value of goods produced by own-consumption	6	0.3	67	90.5	0	0.0	7	9.5
PY080G	Pension from individual private plans	5	0.2	4	80.0	0	0.0	1	20.0
PY090G	Unemployment benefits	119	5.4	105	88.2	5	4.2	9	7.6
PY100G	Old-age benefits	686	31.4	340	49.6	117	17.1	229	33.4
PY110G	Survivor's benefits	20	0.9	7	35.0	3	15.0	10	50.0
PY120G	Sickness benefits	84	3.8	30	35.7	8	9.5	46	54.8
PY130G	Disability benefits	50	2.3	26	52.0	5	10.0	19	38.0
PY140G	Education-related allowances	45	2.1	45	100.0	0	0.0	0	0.0

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

2.4. Mode of data collection

Table 38 : Distribution of household members by data status – all household members (16+) (R2/06)

	Total	RB250 = 11	RB250 = 12	RB250 = 14	RB250 = 21	RB250 = 23
2006						
Total	4,047	4,039	0	8	0	0
%	100.0	99.8	0.0	0.2	0.0	0.0
2007						
Total	3,389	3,380	0	9	0	0
%	100.0	99.7	0.0	0.3	0.0	0.0
2008						
Total	2,474	2,435	0	39	0	0
%	100.0	98.4	0.0	1.6	0.0	0.0
2009						
Total	2,206	2,182	0	24	0	0
%	100.0	98.9	0.0	1.1	0.0	0.0
2006-2009						
Total	12,116	12,036	0	80	0	0
%	100.0	99.3	0.0	0.7	0.0	0.0

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 39 : Distribution of household members by data status – sample persons (16+) (R2/06)

	Total	RB250 = 11	RB250 = 12	RB250 = 14	RB250 = 21	RB250 = 23
2006						
Total	4,047	4,039	0	8	0	0
%	100.0	99.8	0.0	0.2	0.0	0.0
2007						
Total	3,335	3,327	0	8	0	0
%	100.0	99.8	0.0	0.2	0.0	0.0
2008						
Total	2,392	2,359	0	33	0	0
%	100.0	98.6	0.0	1.4	0.0	0.0
2009						
Total	2,076	2,060	0	16	0	0
%	100.0	99.2	0.0	0.8	0.0	0.0
2006-2009						
Total	11,850	11,785	0	65	0	0
%	100.0	99.5	0.0	0.5	0.0	0.0

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 40 : Distribution of household members by data status – co-residents (16+) (R2/06)

	Total	RB250 = 11	RB250 = 12	RB250 = 14	RB250 = 21	RB250 = 23
2006						
Total	0	0	0	0	0	
%	0.0	0.0	0.0	0.0	0.0	0.0
2007						
Total	54	53	0	1	0	0
%	100.0	98.1	0.0	1.9	0.0	0.0
2008						
Total	82	76	0	6	0	0
%	100.0	92.7	0.0	7.3	0.0	0.0
2009						
Total	130	122	0	8	0	0
%	100.0	93.8	0.0	6.2	0.0	0.0
2006-2009						
Total	266	251	0	15	0	0
%	100.0	94.4	0.0	5.6	0.0	0.0

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 41 : Distribution of household members by type of interview– all household members (16+) (R2/06)

	Total	RB260 = 1	RB260 = 2	RB260 = 3	RB260 = 4	RB260 = 5
2006						
Total	4,039	0	3,235	0	0	804
%	100.0	0.0	80.1	0.0	0.0	19.9
2007						
Total	3,380	0	2,323	323	0	734
%	100.0	0.0	68.7	9.6	0.0	21.7
2008						
Total	2,435	0	951	771	0	713
%	100.0	0.0	39.1	31.7	0.0	29.3
2009						
Total	2,182	0	486	1,131	0	565
%	100.0	0.0	22.3	51.8	0.0	25.9
2006-2009						
Total	12,036	0	6,995	2,225	0	2,816
%	100.0	0.0	58.1	18.5	0.0	23.4

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 42 : Distribution of household members by type of interview– sample persons (16+) (R2/06)

	Total	RB260 = 1	RB260 = 2	RB260 = 3	RB260 = 4	RB260 = 5
2006						
Total	4,039	0	3,235	0	0	804
%	100.0	0.0	80.1	0.0	0.0	19.9
2007						
Total	3,327	0	2,305	319	0	703
%	100.0	0.0	69.3	9.6	0.0	21.1
2008						
Total	2,359	0	931	755	0	673
%	100.0	0.0	39.5	32.0	0.0	28.5
2009						
Total	2,060	0	471	1,094	0	495
%	100.0	0.0	22.9	53.1	0.0	24.0
2006-2009						
Total	11,785	0	6,942	2,168	0	2,675
%	100.0	0.0	58.9	18.4	0.0	22.7

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

Table 43 : Distribution of household members by type of interview– co-residents (16+) (R2/06)

	Total	RB260 = 1	RB260 = 2	RB260 = 3	RB260 = 4	RB260 = 5
2006						
Total	0	0	0	0	0	0
%	0.0	0.0	0.0	0.0	0.0	0.0
2007						
Total	53	0	18	4	0	31
%	100.0	0.0	34.0	7.5	0.0	58.5
2008						
Total	76	0	20	16	0	40
%	100.0	0.0	26.3	21.1	0.0	52.6
2009						
Total	122	0	15	37	0	70
%	100.0	0.0	12.3	30.3	0.0	57.4
2006-2009						
Total	251	0	53	57	0	141
%	100.0	0.0	21.1	22.7	0.0	56.2

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

2.5. Imputation procedure

The following chapter describes the imputation procedures in EU-SILC 2006, EU-SILC 2007, EU-SILC 2008 and EU-SILC 2009.

General remarks

The imputation procedures in EU-SILC 2006, EU-SILC 2007, EU-SILC 2008 and EU-SILC 2009 were the same. Imputation refers to all procedures to estimate and insert variable values that were missing due to item non-response.¹⁹

These procedures comprise

- deductive methods
- deterministic methods
- stochastic methods

Deductive methods refer to imputation procedures in which the true value of a missing item is logically deduced. This means that the value is either deduced from other variables of the survey or is derived from legal regulations. An example for the first mode of deductions is the net-gross-net conversion, when either the gross value or the net value is given and the corresponding missing value is calculated by applying general rules. An example for the latter mode is when the value of the childcare benefit (*Kinderbetreuungsgeld*) is missing and the effectual value can be inserted.

The difference between deterministic and stochastic methods is whether the procedure to calculate the missing item includes a residual term or not. Deterministic methods were primarily used in cases when the integration of a residual term seemed unreasonable. Stochastic methods were mainly used to estimate missing income variables. Imputation procedures were both applied to complete missing information because of unit-non-response or because of item-non-response.

Missing personal interviews

Statistics Austria replaced missing personal interviews of persons that could not be interviewed because of temporary absence, refusal of cooperation or other reasons. To do so, a distance function to determine an appropriate donor case to complete the information for the missing interview was applied. The distance function used a given set of variables to compute the similarity of interviews and ranked the interviews accordingly. Then the nearest neighbour was determined as a donor, given that a set of minimum requirements was fulfilled:

- The donor case and the case with the missing personal interview shared the same sex.
- The interview was not a proxy interview.
- The donor case should share the same employment status²⁰

Two procedures of imputing missing personal interviews were possible here: the person was interviewed for the first time or the person was interviewed the previous year. When the person was interviewed in the preceding survey, the information of the last years' interview was used to calculate the distance function. The interviews of the previous year were ranked and the nearest neighbour was identified as the donor for the missing interview. The information of the donor was then used to impute the required information.²¹

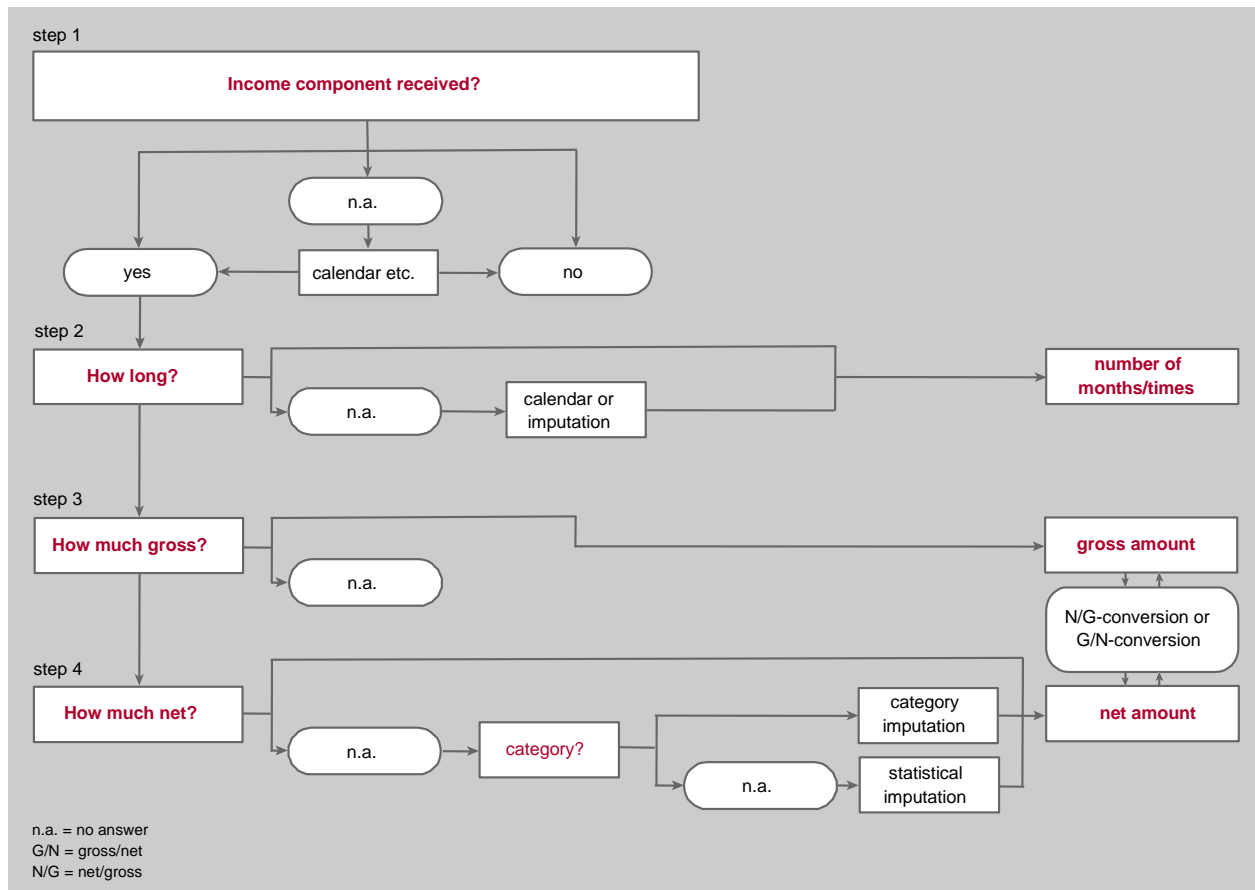
As far as item non-response is concerned, Statistics Austria in general only imputes net income variables, missing gross variables are calculated by the net-gross conversion. The following figure describes the procedure for missing information for income questions.

¹⁹ A full description of the imputation procedure can be found in the annual intermediate quality reports.

²⁰ This was done by determining the number of ranks up until that constraint was fulfilled.

²¹ After the fieldwork for EU-SILC 2008 a short questionnaire was sent to persons whose households had successfully completed the survey but personal interviews of single household members were missing. The questionnaire gathered additional information to the register information to provide a better basis for the imputation of these personal interviews.

Figure 4: Editing procedure for income data



Item non-response for the collected income components are presented in Table 30 - Table 37 on household and personal level and for both net and gross values. Table 44 shows the percentage of imputation over the total number of observations per target variable. The components imputed rent (HY030) and interest repayments on mortgages (HY100) are not directly collected from the respondents and therefore excluded. The corresponding gross values of the net-income values in Table 44 are not included because these variables are calculated on the base of the net value, adding tax and social security payments.

Table 44 : Percentage of imputation over the total number of observations (R2/06)

	2006 %	2007 %	2008 %	2009 %
Total household gross income	65.8	73.8	69.8	68.1
Total disposable household income	39.8	35.0	33.9	37.0
Total disposable household income before social transfers other than old-age and survivors' benefits	39.4	34.5	33.5	36.2
Total disposable household income before social transfers including old-age and survivors' benefits	38.5	33.3	31.6	33.4
<i>Net income components at household level</i>				
Income from rental of a property or land	12.0	5.3	1.3	0.0
Family/child related allowances	0.7	0.3	0.5	1.1
Social exclusion not elsewhere classified	0.0	4.8	0.0	3.2
Housing allowances	4.1	7.4	5.0	7.8
Regular inter-household cash transfer received	5.7	5.3	2.8	7.1
Interest, dividends, profit from capital investments	32.7	23.1	14.0	23.5
Income received by people aged under 16	21.7	21.4	11.1	4.8
Regular inter-household cash transfer paid	5.1	5.6	4.6	6.4
Repayments/receipts for tax adjustment	0.7	2.6	1.9	3.0
<i>Net income components at personal level</i>				
Employee cash or near cash income	14.9	9.6	20.0	21.1
Contributions to individual private pension plans	7.7	9.2	9.3	8.3
Cash benefits or losses from self-employment	19.0	12.5	11.7	10.5
Value of goods produced by own-consumption	11.8	9.9	4.1	9.5
Pension from individual private plans	14.3	33.3	10.0	20.0
Unemployment benefits	8.3	6.0	5.2	10.1
Old-age benefits	11.8	11.7	12.8	14.4
Survivors' benefits	3.2	16.7	5.0	20.0
Sickness benefits	13.9	6.1	15.8	16.7
Disability benefits	5.4	3.4	7.1	10.0
Education-related allowances	16.7	6.5	9.6	0.0

Source: Statistics Austria, EU-SILC longitudinal sample 2006-2009.

2.6. Imputed rent

For the first wave of the longitudinal sample in 2006 Statistics Austria has not calculated imputed rents. However, in 2007, the calculation of imputed rents (HY030G/N) became obligatory.

Households living in a self-owned or rent-free dwelling or in a dwelling that is rented at a reduced rate enjoy a financial advantage compared to households living in a rented dwelling. The idea of imputed rents is, then, to quantify and estimate that financial advantage for the computation of household incomes. The aim is to estimate the virtual rent for self-owned dwellings (and rent-free dwellings as well as dwellings rented at a reduced rate), that a household would have to pay on the free market for its dwelling. This virtual rent, then, is used as a proxy for the financial advantage and is calculated as the imputed rent.

The imputed rent is in short calculated on the basis of the data of the Austrian Microcensus. Based on this data linear regression models are used to estimate the rent for those dwellings, for which no rent information is available (including those dwellings that are rented at a reduced price). This estimate is then used as imputed rent. For dwellings that are rented at a reduced rate, the imputed rent equals the difference between the actually paid rent and the estimated virtual rent for the dwelling.²²

²² For details on the computation of the imputed rents see the final report of the EU-SILC Study on Comparability of National Implementation, Part 2, Computation of imputed rents.

2.7. Company cars

The private use of a company car was recorded in the questionnaire of all four years. The value of this use was deduced according to the relevant tax regulations. The value is included in the variable PY010.

3. Comparability

This chapter reports on the differences between EUROSTAT definitions and the definitions applied in EU-SILC 2006, EU-SILC 2007, EU-SILC 2008 and EU-SILC 2009. The impact of differences on the comparability is also described.

Moreover, this chapter also reports on the application of definitions in EU-SILC 2006, EU-SILC 2007, EU-SILC 2008 and EU-SILC 2009. It is important to note that these descriptions do not necessarily affect the comparability of the variables concerned. The EUROSTAT definitions are specified in EU-SILC Doc 65 (2006-2009 operations).

As requested, the first part of the chapter reports on the basic concepts and definitions applied in EU-SILC and the second part reports on the income components in particular.

3.1. Basic concepts and definitions

(a) Reference population

No difference to the common definition in all four waves.

(b) Private household

The following definition refers to EU-SILC 2006, EU-SILC 2007, EU-SILC 2008 and EU-SILC 2009 similarly.

Private households are generally defined as a person living alone or a group of persons living in the same dwelling. All persons at the dwelling form the household as shared expenses are assumed.

Household members thus are:

- All persons who are actually living in the dwelling unit. The question whether these residents have their main residence in this particular dwelling, is not relevant. Only those dwellings are included in the sampling frame in which at least one person aged 16 years or older has his or her main residence.
- Lodgers, visitors, au-pairs and guests are considered members of the household if they stay or intend to stay 6 months or longer in the household, or if they do not have any other home address.
- Persons who are temporarily away for less than 6 months and are not members of other private households.
- Household members who are absent for 6 months or longer who are not members of other private households and/or are children or partners of actual household members.
- Under the assumption of sharing expenses only one household per dwelling was counted.
- From 2007 onwards the definition is applied more precisely to fully comply with the EUROSTAT definition: If there is more than one household living in one dwelling and not sharing expenses, they are collected as different households. If the persons living at the particular address clearly do not share their expenses (meaning for example a lodger is paying for his or her rent and does not share utility costs or food with the rest of the household), a separate additional household is registered at the same address. Flat-sharing communities are in most of the cases considered as one household because in the majority of cases the members of such communities are sharing their living costs. If the expenses of the flat-sharing community are not shared, meaning that the payments for rent, operating costs and daily expenses are paid individually, the members would constitute individual households.

The following groups of persons connected to the household are not considered as household members:

- Persons 6 months or longer away from the household and not parents or children of actual household members
- Persons less than 6 months away from the household but living in or constituting another private household.

(c) Household membership

Analogous to the definition of private household 2006-2009.

(d) Income period(s) used

No difference to the common definition. The income reference year for EU-SILC 2006 was the year 2005, for EU-SILC 2007 the year 2006, for EU-SILC 2008 the year 2007 and for EU-SILC 2009 the year 2008.

(e) The period for taxes on income and social insurance contributions

No difference to the common definition. Income reference years again were 2005, 2006, 2007 and 2008, meaning that repayments and receipts of tax adjustments are measured if the money was paid or received in the respective year.

- (f) The reference period for taxes on wealth

There are no taxes on wealth in Austria.

- (g) The lag between the income reference period and current variables

In 2006 the fieldwork period started on the 6th of April and ended on the 24th of September. In 2007 the fieldwork was conducted from the 16th of March to the 23rd of September. Therefore, in EU-SILC 2006 and EU-SILC 2007 the gap between the income reference period and the current period exceeded the prescribed gap of 8 month by 3 weeks. In 2008 the fieldwork period started on the 5th of May and ended on September 15th. The gap between the income reference period and the time of the interview exceeded the required eight months by two weeks. For EU-SILC 2009 the fieldwork started on the 9th of April and was finished on October 15th, exceeding the gap of eight months between the income reference period and the time of the interview by six weeks.

- (h) The total duration of the data collection of the sample

For EU-SILC 2006 data collection period lasted 23 weeks. Additionally, until the middle of October several call-backs were carried out, so that the final files were received on the 24th of October 2006. In 2007 data were collected for 27 weeks, the final files all arrived until 25th of October 2007. The final files of the 19 week long fieldwork period of EU-SILC 2008 were transmitted from the fieldwork organisation on the 5th of December. The data collection period for EU-SILC 2009 lasted 27 weeks and the last files were received on the 30th of October 2009.

- (i) Basic information on activity status during the income reference period

In all waves the information was collected with the questionnaire by an activity calendar covering each month of the income reference period.

3.2. Components of income

In the following sections we describe the collection of income components in EU-SILC 2006-2009 in Austria and the application of definitions for income components. Please note that the description of the application of definitions, the description of the data collection procedure and the computation procedure do not necessarily indicate a difference from EUROSTAT definitions and the variable definitions in the relevant documents (mainly EU-SILC Doc 65 for the 2006-2009 operations).

3.2.1. Differences between the national definitions and standard EU-SILC definitions

- (a) Total household gross income (HY010)

The Austrian questionnaire comprised questions on two income components that are not target variables of EU-SILC. These components were, first, the income received by persons doing their military service or civilian service, and, second, "other income, not elsewhere classified". The latter question was integrated to avoid under-recording caused by misunderstandings. The total disposable household (gross) income contains these two income components. On individual level, the income from military/civilian service was integrated with the income for employees and the "other income" was merged either with the employee income, the income from self-employment or old-age benefits, depending on plausibility. This application of the definitions of target variables in the document EU-SILC 065 is consistent with the guidelines of EUROSTAT.

- (b) Total disposable household income (HY020)

See above (HY010).

- (c) Total disposable household income, before social transfers other than old-age and survivors' benefits (HY022)

See above (HY010).

- (d) Total disposable household income, before social transfers including old-age and survivors' benefits (HY023)

See above (HY010).

- (e) Cash-or near-cash employee income (PY010)

This variable additionally includes payments in kind for the private use of company cars, income from compulsory military or civilian service, other income not elsewhere classified (if plausible) and proportional lump-sum payments if the person is employed for more than one month. According to the document EU-SILC 065 the fully taxable value for the private use of the company car as near cash income can be included in PY010 because PY021 (company car) foresees a value which indicates the including of the company car in another variable ("-4 – amount included in another component"). Income from civilian/military service and lump sum payments are also added to PY010. If plausible, "other incomes not elsewhere classified" have been added to PY010 as well. This approach is consistent with EUROSTAT's definitions of target variables.

(f) Non-cash employee income (PY020)

Payments in kind for the private use of a company car are included in PY010. Other payments in kind were recorded since EU-SILC 2006 but according to the regulation they are only included in PY020 from 2007 on. According to EU-SILC Doc 65 (2009 operation) non-cash employee income includes among others the following subcomponents: Free or subsidised meals, free or subsidised housing, other goods and services. PY020 is not included in the household income.

(g) Cash profits or losses from self-employment (PY050)

This income component includes additionally other income not elsewhere classified, if plausible (see above (HY010)) and negative incomes. Sales revenues from privately sold goods (like sold fruits from the own garden) are also part of this income component. From 2007 onwards no gross variables were surveyed, but the respondents were asked to give the amount paid for social security and income tax for their self-employment. These payments were added to the net amounts to obtain the gross amounts. The questions on privately sold goods were asked on the household level to avoid double reporting. The whole amount is attributed to the person with the highest income from self-employment or, in case that there is no self-employed person within the household, to the person with the lowest personal income. To gather the information for this variable the net amounts from self-employment and the amounts paid for social security and income tax for self-employment were asked. Based on this information the gross amount is calculated. The definitions and calculations for this variable are consistent with EUROSTAT's definition of the target variable.

(h) Value of goods produced for own consumption

This component was collected from 2006 on and is mandatory since 2007. This question appears in the household questionnaire to avoid double reporting. The whole amount is attributed to the person with the highest income from self-employment or, in case that there is no self-employed person within the household, to the person with the lowest personal income. Sales revenues from privately sold goods are not included (see PY050). PY070 was not included in the household income.

(i) Unemployment benefits (PY090)

If the person is unemployed (for at least 2 months), this income component includes proportional lump-sum payments. This refers to severance payments which are to be included according to the document EU-SILC 065.

(j) Old-age benefits (PY100)

Since the standard retirement age in Austria is 65 years for men and 60 years for women, it contains all pension benefits paid to persons aged 65/60 or over, including other incomes not elsewhere included if the person is retired. This approach is consistent with EUROSTAT's definitions of target variables.

(k) Employer's social contributions (PY030)

PY030 is the third income variable that has been asked only since EU-SILC 2007. Employer's social contributions are calculated as a percentage of employee cash or near cash income (PY010G/N). PY030 is not included in the household income and complies fully with the EUROSTAT guidelines.

3.2.2. The source and procedure used for the collection of income variables

All income data have been collected with questionnaires, no register information was used to obtain income information. The EU-SILC income target variables were split into more differentiated sub-components. These sub-components were defined according to the Austrian tax regulations and benefit system. Some components of the EU-SILC income target variables were calculated on the basis of auxiliary information given in the questionnaire. For example the amount of family allowances was calculated upon the number and age of children receiving this benefit.

Between the four waves from EU-SILC 2006 to EU-SILC 2009 the questionnaire was partly revised for some income variables.

2007 was the first year of the Austrian EU-SILC operation where computer assisted telephone interviews were conducted (CATI technique) However the majority of interviews (93.8%) were still carried out with computer assisted personal interviewing (CAPI). The CATI method was tested on a small subsample of follow-up households (In all four rotations of 2007, 21 CATI interviews were done by the fieldwork institute, 553 CATI interviews were conducted by Statistics Austria). CATI was used more widely from EU-SILC 2008 onwards. In 2008 a total of 2,223 CATI interviews were conducted in all rotations. In 2009 the number of CATI interviews increased to 3,561.

3.2.3. The form in which income variables at component level have been obtained

Respondents were asked for all income components that are subject to taxation and/or social security contribution, to give the net and gross amount. Gross in this context means that if a component is subject to taxes and social security contributions both amounts were included. Employer's contributions were not taken into account.

3.2.4. The method used for obtaining the income target variables in the required form

The procedure to obtain the income target variables for EU-SILC was the same for the years 2006 to 2009. Gross and net income variables were asked separately, if applicable. If the respondents were not willing or not able to provide one of these amounts (net or gross) Statistics Austria calculated the missing value on the basis of the information given, e.g. if the net value was given and the gross value was missing, the gross value was calculated on the basis of the net value. If both values were missing (and the respondent refused or was not able to give an income class), Statistics Austria first imputed the net value and then calculated the gross value on the basis of the imputed net value (see chapter 2.6).

The conversion between net and gross values for employees' income and pensions was carried out on the basis of tax statistics. This means wage tax statistics for the income reference year. Income from self-employment was converted on the basis of regression models which used the information of complete cases (cases where the net and the gross value was given).

3.3. Tracing rules

For all four waves of the longitudinal component of EU-SILC, the tracing rules as laid down in the document EU-SILC 065 were applied. To identify the residence of persons moving from one address to another address, Statistics Austria made use of the ZMR.

4. Coherence

Coherence refers to the comparison of target variables with external sources. At present there are no reliable external data for the four-year longitudinal sample of 2006-2009. However, for EU-SILC 2006, 2007, 2008 and 2009, cross-sectional data were compared to the Wage Tax Statistics, the National Accounts and the Microcensus (only EU-SILC 2008 and EU-SILC 2009). These comparisons can be found in the Austrian intermediate quality reports of the years 2006-2009.